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ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

THE MACHINIST

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WHAT'S IN OUR HANDS?

The history and progress of the manufacturing industry till recently has been described through products and technology. That's no more going to happen. Here on, the evolution of our great industry will be explained through transitions. That is not only more apt in terms of capturing the essence of the times that the industry is going through, but it is also more just and detailed. Transitions encapsulate visions and pains, dreams and fears, positives and negatives, milestones and losses, as well as booms and busts. Wouldn't it be far more enlightening and illuminating? Would love to hear your thoughts on this!

Obviously, the reason I am highlighting transitions is because our industry is going through one of them. Look at it this way – we can't describe the industry's journey only through the development of automation or robotics or AI. These are at most tools, or by-products – albeit very fancy

“THE HISTORY AND PROGRESS OF THE MANUFACTURING INDUSTRY TILL RECENTLY HAS BEEN DESCRIBED THROUGH PRODUCTS AND TECHNOLOGY. HERE ON, THE EVOLUTION OF OUR GREAT INDUSTRY WILL BE EXPLAINED THROUGH TRANSITIONS.”

and sophisticated ones! They cannot change the market dynamics; they are either born through market dynamics or are influenced by the dynamics. What makes a difference is how the market responds to its own vagaries and that nobody can control beyond a certain point; and that too can be done only superficially. The market is its own animal and it behaves in its own way. But one thing is for sure! This animal likes hope if it comes with courage and innovation if it comes with attitude. That certainly is in our hands. What say?

Editor & Chief Community Officer

THE MACHINIST
ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

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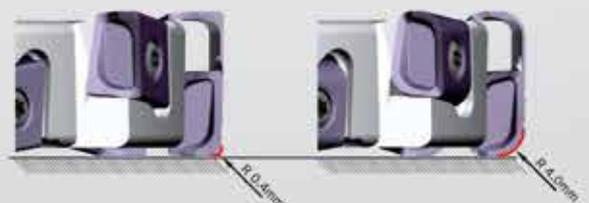


R 3.0mm

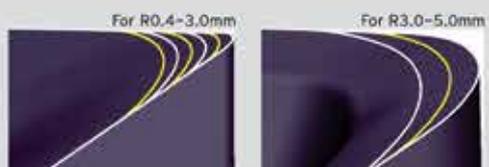


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India's defence industry to be US\$ 26 billion by 2025

RAKSHA MANTRI RAJNATH SINGH has said the Government is committed to work towards achieving a US\$ 26 billion Defence industry by 2025. Addressing the second annual session of Society of Indian Defence Manufacturers here today, he said the Defence sector has been identified as one of the most prominent sectors under "Make in India" Initiative to realize US\$ 5 Trillion Economy by 2024.

Underlining the need to reduce dependency on arms imports, Raksha Mantri said several steps have been taken under

the "Make in India" initiative to make the country a major Defence manufacturing hub and net Defence exporter. The Government would not hesitate to initiate more measures, if required, he added.

He said that the defense production policy reflects the resolve of the government to achieve US\$ 26 billion Defence industry with an anticipated investment of US\$ 10 Billion in aerospace and Defence goods and services by 2025. This will also provide employment to about 2-3 million people. He said, the government has introduced many far-reaching

reforms in the past five and a half years to create an ecosystem where private and public sectors contribute together as per their respective strength and experience. The reforms have touched almost all aspects of Defence production and procurement, he added.

Raksha Mantri said that simplification of procedures for Defence Exports has resulted in export of Rs. 10,745 Crore in 2018-19, which is nearly seven times the export achieved in 2016-17 and a target of US\$ 5 Billion for exports has been set till 2024.

BRAHMOS Supersonic Cruise Missile, with major indigenous systems, successfully test-fired

BRAHMOS supersonic cruise missile featuring Indian propulsion system, airframe, power supply and other major indigenous components, was successfully test fired recently from ITR, Chandipur in Odisha. The missile was successfully test-fired for its full range of 290-km during the launch jointly conducted by DRDO and BrahMos Aerospace.

With this successful mission, the indigenous content in the formidable weapon has reached a high value, thus bolstering India's defence indigenisation and the flagship 'Make in India' programme.

Raksha Mantri Shri Rajnath Singh congratulated team DRDO, BrahMos and Industries for the successful mission.

Secretary, Department of Defence, R&D and Chairman DRDO, Dr. G. Satheesh Reddy and DG, Missiles and Strategic Systems Shri MSR Prasad also congratulated for the successful launch.

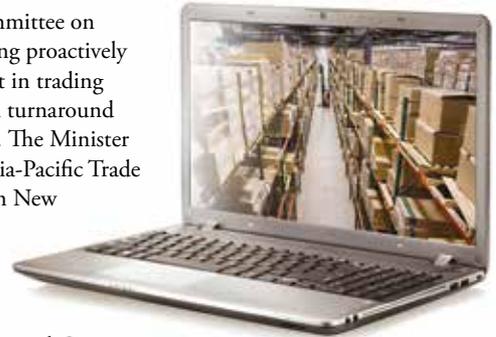
DG (BrahMos) Dr Sudhir Kumar Mishra, Director DRDL Dr Dashrath Ram and Dr BK Das Director ITR coordinated and witnessed the entire mission at the launch site and termed the successful flight test as a landmark achievement in enhancing India's "Make in India" capabilities.

Jointly developed by India and Russia, the versatile BRAHMOS has been operationalised in the Indian Armed Forces with all the three services.

National Logistics Policy to reduce trade costs

PIYUSH GOYAL, Minister of Commerce and Industry and Railways, said that in a landmark move, the government is planning to launch a National Logistics Policy to reduce trade costs. All transport sectors of railways, civil aviation, roads and shipping would work towards bringing logistics costs below 10%, he added.

Further, the National Committee on Trade Facilitation is working proactively to ensure the improvement in trading environment with reduced turnaround time and transaction costs. The Minister was speaking at the 9th Asia-Pacific Trade Facilitation Forum 2019 in New Delhi, organised by Department of Policy for Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, and Confederation of Indian Industry (CII).



With the Government introducing a plethora of reforms including digitization of trade procedures and fulfilment of the Sustainable Development Goals, India is on the pathway of achieving the goal of US\$ five trillion economy, said the Minister.

He highlighted the importance of adopting a collaborative and integrated approach at the Asia-Pacific level in combating the common challenges of rapid urbanisation, climate change, poverty, and inequality, among others. Goyal reinforced the government's strong commitment to the 'Act East Policy' for integration of the Indo-Pacific Region.

Dr. Armida Salsiah Alisjahbana, Under-Secretary-General of the United Nations and Executive Secretary of ESCAP, while stressing on the importance of cross border digitisation stated that 'digital and sustainable trade facilitation needs to be supported as a source for good in the region and the world'. She further mentioned that with trade being recognised as one of the UN Sustainable Development Goals 2030, it is the need of the hour to rationalize trade procedures, increase the adoption of WTO's Trade Facilitation Agreement across the Asia-Pacific Region, and leverage e-commerce as the sector for the future.

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Indian Railways signs MoU with CII for going green



Speaking at the special occasion, Angadi said that, Indian Railways has always been in the forefront in fostering and promoting eco-friendly practices and approaches. Railways have been adopting a blend of energy and environmental approaches, coupled with appropriate technological interventions in addressing ecological issues, added the Hon'ble Minister. ICF, Chennai and MCF, Raebareli have already become energy neutral and Indian Railways as a whole, very soon aspires to become fully energy neutral, underlined the Hon'ble Minister. Indian Railways is glad to partner with CII in taking forward its green mission, said the Hon'ble Minister.

RECENTLY, CII AND INDIAN RAILWAYS entered into the next phase of partnership for facilitating green initiatives in Indian Railways, by inking an MoU. The MoU was exchanged in the presence of Suresh C. Angadi, Hon'ble Minister of State for Railways, by Shiven-dra Mohan, Executive Director, EnHM / ME, Rly. Board and S Raghupathy, Dy. Director General & COO, CII.

Skill India, IBM join hands for Train-the-Trainer program in Artificial Intelligence

THE DIRECTORATE GENERAL OF TRAINING (DGT) DIVISION of the Ministry of Skill Development & Entrepreneurship, has signed an agreement with Global IT major IBM where the latter will carry out a nationwide Train-the-Trainer in Basic Artificial Intelligence Skills. As part of the program, ITI trainers will be trained on basic Artificial Intelligence (AI) skills towards using the technology in their day-to-day training activities.



This program aims at enabling the trainers with basic approach, workflow and application of artificial intelligence that they can apply in their training modules. IBM aims at training 10,000 faculty members from ITIs across the country and the program will be executed over a period of one year with 14 trainers across 7 locations with over 200 workshops.

Dr. Mahendra Nath Pandey, Minister for

Skill Development and Entrepreneurship, asserted that in the coming times "Many more training programs will be initiated for the trainers.

These will be integral for skilling the youth with modern technological knowledge and skills. These digital skills will provide an edge to the trainers responsible for imparting academic curriculum to students and help them enter the workforce, as they are aligned to industry 4.0."

RK Singh, Minister of State, Ministry of Skill Development and Entrepreneurship stated "Programs for training the trainers that bridge the technological gap between the students and teachers are the need of the hour. These programs will ensure the passing of industry relevant skills to students promoting better learning and better retention by the students."

Tata Motors wins contract for 300 electric buses

AFTER HAVING DELIVERED OVER 200 ELECTRIC BUSES with over 60% market share under the FAME I, Tata Motors announced that it has bagged the contract of 300 e-buses by the Ahmedabad Janmarg Limited (AJL). This mandate to Tata Motors is the largest in the country so far making Tata Motors the only Indian OEM to bag the biggest order supporting the Government's e-mobility drive in the country. The company will supply Urban 9/9 Electric model of buses which will run in Ahmedabad's BRTS corridor. These buses will be deployed under the OPEX model and Tata Motors will be setting up the required infrastructure including fast charging and support system as well.

Speaking on the occasion, Girish Wagh, President, Commercial Vehicles Business Unit, Tata Motors, said, "We are delighted to have won the largest tender of e-Buses in the country. Tata Motors has been playing a proactive role in the electrification drive, with the development of electric traction system for Hybrid as well as Pure Electric vehicles. The Ultra Electric buses are indigenously developed to offer superior design and best-in-class features. We will continue to support the Government in their commitment towards creating a sustainable future for India."

New Centre for Science and Technology to be set up

DEFENCE RESEARCH & DEVELOPMENT ORGANISATION (DRDO), Ministry of Defence and Central University of Jammu (CUJ) have entered into an MoU for establishing Kalam Centre for Science and Technology (KCST) at the university. The MoU signing ceremony was held in the presence of Raksha Mantri Rajnath Singh.

The main objective of the MoU is to undertake and facilitate multidisciplinary directed basic and applied research and technology development in the identified research verticals namely; Computational System Security and Sensors. The centre will be equipped with state-of-the-art facilities and equipment leading to increase in research scholars in these areas.

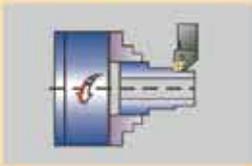
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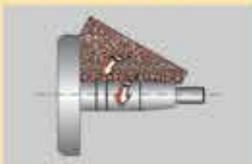


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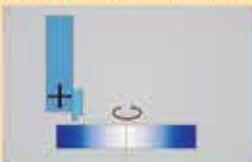


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A list of key events happening between October 2019 to September 2020, both nationally and internationally.

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**OCTOBER 17-
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**NOVEMBER
15-18, 2019**

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**DECEMBER
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Engimach 2019
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**DECEMBER
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**JANUARY
16-20, 2020**

Plastivision 2020
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**JANUARY
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**JANUARY
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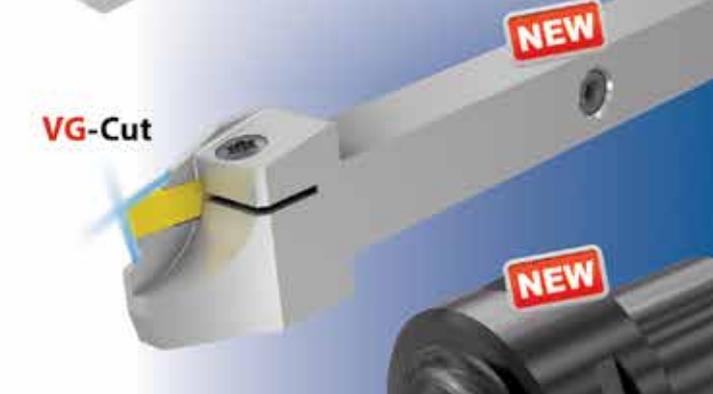
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Indradev Babu elected as President of IMTMA



The Indian Machine Tool Manufacturers' Association (IMTMA) held its 73rd Annual General Meeting (AGM) at the Bangalore International Exhibition Centre (BIEC). Indradev Babu, Managing Director, UCAM Private Limited was elected as the new President of IMTMA.

Indradev Babu will succeed P. Ramadas, Managing Director, Ace Manufacturing Systems Limited as IMTMA's President. Ravi Raghavan, Managing Director, Bharat Fritz Werner Limited was elected as the new Vice President of IMTMA.

The new Executive Committee of IMTMA for the year 2019-2020 was also formed.

Rakesh Makhija joins Board of Castrol India Limited



Castrol India Limited has announced the appointment of Rakesh Makhija as an independent non-executive director to its Board of Directors with effect from 1 October 2019.

Makhija brings over four decades of significant top management experience with diversified industrial and technology companies. He has held senior sales and general management roles including international ones, having worked across geographies like China and Sweden, besides India.

While he has served as the non-executive Chairperson of SKF India between July 2015 to May 2019, Makhija has recently been appointed as non-executive Chairperson at Axis Bank, the third largest private sector bank in India in July 2019 for a three-year term.

Makhija has also held several senior management positions within Tata Honeywell and Honeywell International, the global industrial and aerospace company and Kinetics Technology International BV (now Technip), a process engineering and contracting company in the Netherlands.

He is a chemical engineer from the Indian Institute of Technology, New Delhi and has been recognized with numerous industry awards.

R Gopalakrishnan, non-executive Chairperson, Board of Directors, Castrol India Ltd said: "We are very pleased to welcome industry veteran Rakesh Makhija to the Castrol India Board. With his deep domain knowledge, and experience of leading successful businesses in varied sectors, we look forward to his incisive strategic insights which will add enormous value to the Castrol India business as it aspires to reach new levels of success."

Shruti Singhal is President of DSM Engineering Plastics



Royal DSM has announced that Shruti Singhal is appointed President DSM Engineering Plastics. Singhal, a US national, joined DSM in July 2018 as Managing Director Global Powder, Can and Coil and CMO at DSM Resins and Functional Materials. In these roles he successfully turned around the global powder business and built a strong global strategic and marketing organization to position the business for sustainable and innovative growth in the future.

Prior to joining DSM Singhal served as Senior Vice President and President EMEA of General Cable. Throughout his career, he has worked in North America and Europe, and held positions of increasing management and executive responsibility with multinational companies including Henkel, Cognis (now BASF), Rohm & Haas, The Dow Chemical Company, Ashland and Solenis. Shruti holds a master's degree in Chemical Engineering from Drexel University, Philadelphia, and completed the Global Marketing Management Program at The Wharton School at the University of Pennsylvania.

In his new role Shruti will report to Dimitri de Vreeze, Member of the DSM Managing Board.

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By Panish PK

THE NEW WAVE

Today, women have proven themselves to be as competent as their male counterparts in professions they were discouraged to venture.



Gender segregation of jobs is a trend of the past. Third wave feminism amplified the voices of critics who questioned the authenticity of this practice. Time inspired many more to barge into less trodden fields, disregarding all pre-designated gender roles and breaking lifelong stereotypes. The construction and manufacturing space was no stranger to this revolutionary change.

The front runners of all industries today lead their respective market segments with unique ideas and innovative upgrades to surpass their competitors. The same ideas, empowered by the passion to excel, catapulted women in the construction and manufacturing sector. Women, today have proven themselves to be as competent as their male counterparts in professions they were discouraged to venture. Among many other inspiring women who chose unconventional journeys, Sulakshana Bhattacharya too dared to dive into the world of makerspace, for as she puts it, “I have always followed my own path without feeling the need to conform to any predefined social norms. When you love what you do, you grow as a happy person.”

BREAKING STEREOTYPES - DRILLING THEIR WAY INTO THE INDUSTRY

Industry 4.0 ushered in an era that urged market sectors to enhance the quality of performance with minimal resources. Advancements in the field of technology were the only way to address the challenging demands put forth by the changing times.

Innovative ideas backed by technical upgrades have significantly impacted the time and effort put into work by creating a range of new-generation, state-of-the-art power tools. Construction, today, is no longer a test of strength for professionals as their burden now rests in the safe hands of their high-performance tools. Despite the red flags of unequal pay soaring high in the construction and makerspace, women are actively trying to oust the general stereotypes that govern the machinery and tools landscape and rise as individual, successful entrepreneurs.



“The shortage of women in the industry means there is a lack of role models that aspiring young ladies can look up to.”

Rural women are increasingly turning towards the construction industry, in hopes of attaining financial stability. Several self-help groups have recognized this trend and are taking the initiative to assist women in their respective ventures. For instance, the Self-Employed Women’s Association in Ahmedabad trains women in the field of carpentry, masonry and plumbing. Organizations like the Mahila Housing Trust offer schemes to protect the interests of women labourers in the industry. Apart from construction and creation, this segment is also home to many artists, adorned with opportunities for those with an eye for art and craft, design and woodwork.

Latest trends have recorded an uptick in the number of women purchasing power tools. According to Slate, brands aware of this trend have already foraged

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power tool markets with 'pink' tools in attempts to entice this consumer segment and encourage purchase by the female population. Women are no longer alien to power tools and its uses, and are cognizant about the specific tools required for the right tasks.

TECHNOLOGY ABETTING WOMEN PROFESSIONALS

The advent of power tools was an appropriate response to the rising pressure of delivering efficiency within the industry. Sturdy and muscular arms are no longer necessary for crafting, honing, building and creating. This has inherently sparked interest among many women artists and creators who were previously discouraged by the idea of physical exertion.

Like many other sectors, the construction industry needs to make dedicated efforts to address issues of the gender pay gap in the industry. Firms that can reduce such gender-related challenges will gradually witness stronger feminine presence in their workplaces. The shortage of women in the industry means there is a lack of role models that aspiring young ladies can look up to. Several forums and workshops have taken the onus to discuss opportunities available in the industry and train interested professionals across the segment to encourage women to follow their passion, take up jobs and power tools to create, build, design and engage. 

The author is Regional Business Director, India & SAARC, Bosch Power Tools

CHENNAI MACHINE TOOL EXPO 2019 HELD SUCCESSFULLY

The first edition of Chennai Machine Tool Expo was organised successfully at the Chennai Trade Centre. The expo was held from 26th to 29th September 2019 and it provided a platform for the growth of regional machine tool industries based in Tamil Nadu and South India.

The four-day show, featuring around 55 exhibitors from India, Japan, Korea, Singapore, and the USA, showcased the latest technologies in metal cutting and metal forming. The machines and accessories on display served the needs of key user industries such as aerospace, defense, railways, automotive, medical engineering, construction, information technology, and electronics.

Speaking about the auto sector disruptions, the Chief Guest for the expo, Srivats Ram, Managing Director, Wheels India Limited, Past President of ACMA and Governing Board Member of Advanced Manufacturing Technology Development Centre said, "The worst is over for the automotive industry and machine tool builders need to focus on building technology capabilities. Overall manufacturing scenario is volatile and industrial units need to be cautious while investing in new areas and embarking on expansions. Although capacity addition may be less, the situation will improve. He further added, "I am delighted that IMTMA has launched a show in Chennai. There is a large pool of SMEs in Chennai which provides the potential for growth and



exhibitions like this are key enablers."

Stating his views on CMTX 2019, Indradev Babu, President, IMTMA said, "IMTMA has always played an enabler role in the development of machine tool industry and Chennai Machine Tool Expo is one such initiative to bring technology to the doorsteps of the industrial units located in Tamil Nadu and South India." He added, "We have received an encouraging response to the show given the tough market situations. I can see immense potential for the show to grow in the future."

Earlier in his welcome address, V. Anbu, Director General & CEO, IMTMA said, "Chennai Machine Tool Expo will bring immense value to SMEs based in Chennai. We have 55 companies participating from five countries."

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ACC powers the future with Solar Power

ACC is making the smart energy choice under the sun! Our commitment to reducing our environmental footprint and dependence on conventional energy sources, has led us to greatly increase our use of solar power in the cement manufacturing process. ACC has set up a 5.35 MW solar photovoltaic plant at its cement plant in Jamul, Chhattisgarh, in partnership with Amplus Solar, which will generate ~ 8.0 million units of solar energy per year.

Commenting on this sustainability initiative, Neeraj Akhoury, Managing Director & CEO, ACC Limited, said, "We are delighted to commence operation of our solar photovoltaic plant at our ACC Jamul plant which will help reduce the carbon intensity in our cement production. This initiative is in line with our commitment to utilize cleaner renewable energy, support the substitution

of conventional electrical energy and reduce our reliance on fossil fuels as well as lower energy costs. We will continue to move steadily towards sustainable energy for a sustainable future."

An assessment conducted by the Solar Energy Research Institute of Singapore (SERIS) certifies that this system will produce ~ 8.0 million units of green electricity per year – enough to power ~ 1,38,300 people's annual requirement. More importantly, switching to solar energy avoids 7,100 tonnes of CO2 emissions each year and saves ~ 1.7 million litres of water annually.

The solar energy generated will be used to help power operations at ACC's cement plant in Jamul, lowering operating costs in the long-run and reducing reliance on the grid.

Godrej's Plant-13 Annexe wins IGBC Award



Godrej & Boyce Mfg. Co. Ltd., a Godrej Group Company, has created a new benchmark in the field of 'Performance Monitoring' of Energy & Water Systems in buildings. 'Plant-13 Annexe Building', a part of Godrej's Vikhroli campus in Mumbai, is the recipient of the 'IGBC Performance Challenge 2019 for Green Buildings - Excellence Award'.

Plant - 13 Annexe is a multiple use office and convention centre and over the years, this building has demonstrated the highest standards of performance. It has won many accolades including the 'IGBC-EB Platinum Rating' under the 'Existing Building' certification and the 'BEE 5-Star Rating' which further certifies the building to a 'Minimum Energy Performance'. With the IGBC Net Zero Rating, the building has achieved a unique status of being self-sustainable by being fully powered by onsite and offsite renewable energy sources.

Speaking on the occasion, George Menezes, COO, Godrej Electrical & Electronics said, "Godrej has been at the forefront of the Green Building Movement right from 2004, when we set up the CII – Sohrabji Godrej Green Business Centre, the first Platinum rated Building in the country. There are more than 1800 green building projects in the country which are operational and today India stands tall amongst countries that have embraced sustainability. While many projects designed as green are in operation, there is now a dire need to sustain the benefits during the life time of the project. We continue to lead the industry in this space, testimony of which is our Plant-13 Annexe Building, which also has the distinction of being the first 'Net Zero Building' in the country under IGBC's Rating System."

Panasonic aims for green business operations

Panasonic Corporation has joined RE100*, The Climate Group's global initiative bringing together the world's most influential businesses committed to 100 percent renewable power. By 2050, Panasonic will switch the electricity used globally in its operations to 100 percent renewable energy, and aim for production that does not emit CO2.

Panasonic Corporation has formulated its long-term environmental management vision called "Panasonic Environment Vision 2050" in June 2017, and has been promoting environmental activities with a clear direction toward 2050.

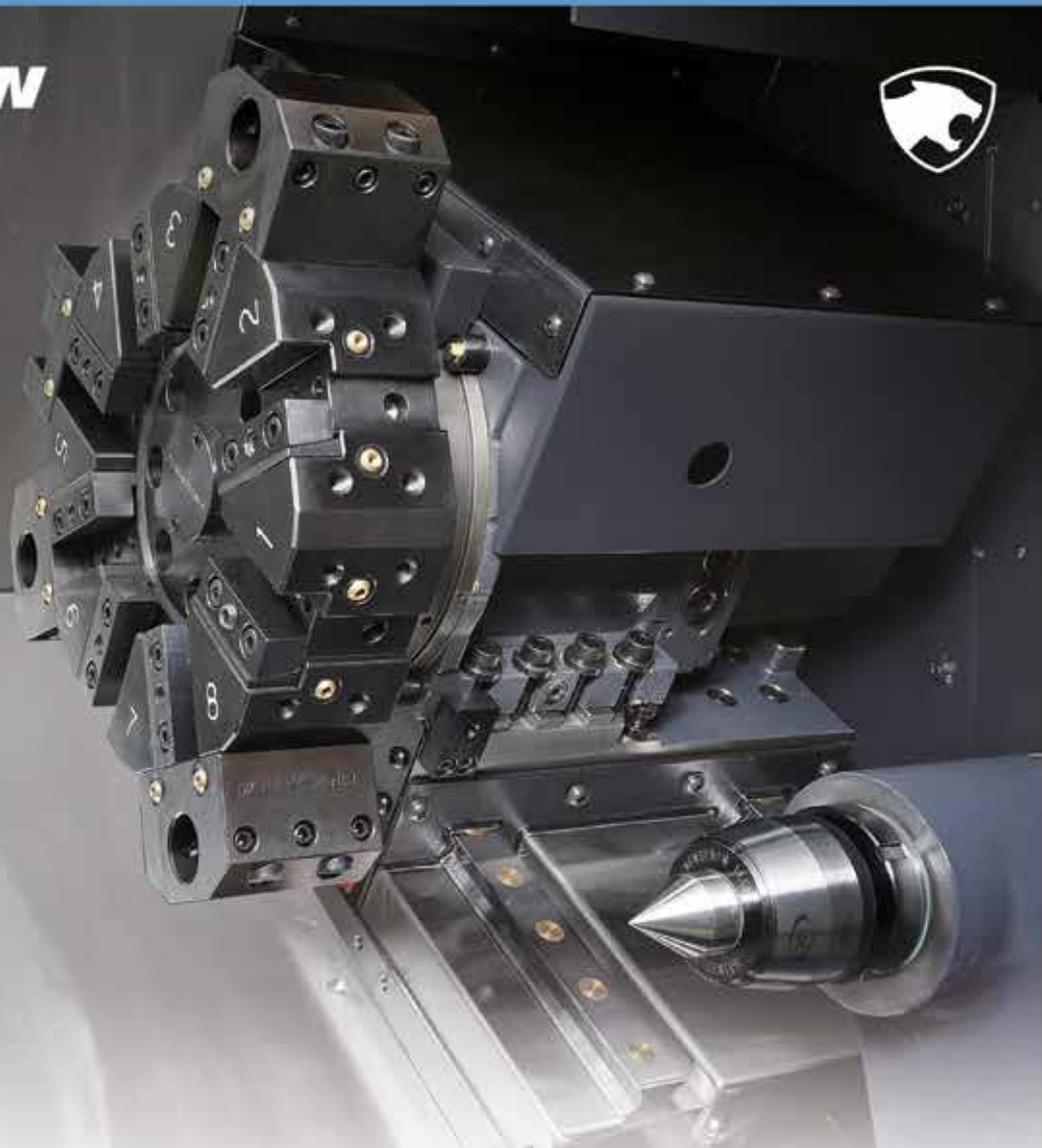
As part of its activities to promote businesses aiming for a sustainable society under this vision, the company is making a global effort to create factories that do not emit CO2 during their operation. Specifically, in addition to energy-saving activities at factories, Panasonic is promoting the utilization of renewable energy by installing renewable energy power generation systems such as photovoltaic systems at its sites, as well as the procurement of 100 percent renewable electricity at its zero-CO2 model factories in Japan, Europe, and the Americas.

LG India goes green with solar modules

LG Electronics India Pvt Ltd is developing a new CDM (Clean Development Mechanism) project applying solar modules in India. LGEIL is operating two manufacturing sites in Noida & Pune to provide various kinds of home appliances for Indian customers.

LGEIL is planning on installing solar modules on the roof-top of our factory buildings. The capacities of total solar modules are 3.1 MWp and 3.0 MWp, in Noida and Pune site, respectively.

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CORPORATE TAX RATES SLASHED

Corporate tax rates slashed to 22% for domestic companies and 15% for new domestic manufacturing companies and other fiscal reliefs



The Government has brought in the Taxation Laws (Amendment) Ordinance 2019 to make amendments in the Income-tax Act 1961 & the Finance (No. 2) Act 2019. This was announced by the Union Minister for Finance & Corporate Affairs Nirmala Sitharaman recently. She detailed the salient features of these amendments:

- a. In order to promote growth & investment, a new provision has been inserted in the Income-tax Act with effect from FY 2019-20 which allows any domestic company an option to pay income-tax at the rate of 22% subject to condition that they will not avail any exemption/incentive. The effective tax rate for these companies shall be 25.17% inclusive of surcharge & cess. Also, such companies shall not be required to pay Minimum Alternate Tax.
- b. In order to attract fresh investment in manufacturing & thereby provide boost to 'Make in India' of the Government, another new provision has been inserted in the Income-tax Act with effect from FY 2019-20 which allows any new domestic company incorporated on or after October 1, 2019 making fresh investment in manufacturing, an option to pay income-tax at the rate of 15%. This benefit is available to companies which do not avail any exemption/incentive & commence their production on or before March 31, 2023. The effective tax rate for these companies shall be 17.01% inclusive of surcharge & cess. Also, such companies shall not be required to pay Minimum Alternate Tax.

- c. A company which does not opt for the concessional tax regime & avails the tax exemption/incentive shall continue to pay tax at the pre-amended rate. However, these companies can opt for the concessional tax regime after expiry of their tax holiday/exemption period. After the exercise of the option they shall be liable to pay tax at the rate of 22% & option once exercised cannot be subsequently withdrawn. Further, in order to provide relief to companies which continue to avail exemptions/incentives, the rate of Minimum Alternate Tax has been reduced from existing 18.5 to 15%.
- d. In order to stabilise the flow of funds into the capital market, it is provided that enhanced surcharge introduced by the Finance (No.2) Act, 2019 shall not apply on capital gains arising on sale of equity share in a company or a unit of an equity oriented fund or a unit of a business trust liable for securities transaction tax, in the hands of an individual, HUF, AOP, BOI and AJP.
- e. The enhanced surcharge shall also not apply to capital gains arising on sale of any security including derivatives, in the hands of Foreign Portfolio Investors (FPIs).
- f. For providing relief to listed companies which have made a public announcement of buy-back before July 5, 2019, it is provided that tax on buy-back of shares in case of such companies shall not be charged.
- g. The Government has also decided to expand the scope of CSR 2% spending. Now CSR 2% fund can be spent on incubators funded by Central or State Government or any agency or Public Sector Undertaking of Central or State Government, and, making contributions to public funded Universities, IITs, National Laboratories and Autonomous Bodies (established under the auspices of ICAR, ICMR, CSIR, DAE, DRDO, DST, Ministry of Electronics & Information Technology) engaged in conducting research in science, technology, engineering & medicine aimed at promoting SDGs.

The total revenue foregone for the reduction in corporate tax rate and other relief estimated at Rs. 1,45,000 crore. 🇮🇳

Source: PIB

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A POSITIVE CHANGE

Here is how the industry is reacting towards the slashed corporate tax rate



A WELCOME STRUCTURAL CHANGE

As announced by the Honorable Finance Minister of India, we are pleased to note that the corporate tax rate for large domestic companies has been slashed from 30 to 22 per cent without incentive or exemption and that of new local manufacturing companies in India has been further lowered to 15 per cent without incentive or exemption. Also, it is welcoming that Minimum Alternative Tax (MAT) will not be applicable when adopting corporate tax under this new provision. This is a welcome structural change and comes as a great respite to corporates. This positive move from the Government of India will lead to further investments in the country as well as create more business opportunities. The 'Make in India' initiative will thus get a further impetus.

As far as automotive sector is concerned, we believe that on a mid to long term basis, the government should consider the merits of moving towards a carbon (fuel efficiency)-based GST taxation policy which will not only lead to huge fossil fuel savings but will also help in lowering emissions.

Shekar Viswanathan, Vice Chairman and Whole-time Director, Toyota Kirloskar Motor



AN EXCELLENT INITIATIVE

The new tax reforms are an excellent initiative from the Government of India and a step in the right direction. We welcome the reductions in the corporate tax rates which were quite high earlier. This should help the industry to grow with a due higher investible surplus now.

Vinod Aggarwal, Managing Director & CEO, VE Commercial Vehicles



A BIG PUSH FOR THE HOME APPLIANCES SECTOR

The new tax structure announced by the finance minister ahead of the festive season is a big push for the home appliances sector which grows with the growth of economy and households. By announcing a reduction in Corporate Tax to 22 per cent for existing companies and 15 per cent for New Manufacturing Companies the government has answered a long-standing demand of the corporates. This would encourage the competitiveness of Indian manufacturing by minimising tax cash outflows which would be ploughed back into Economy. Not only will there be an increase in the domestic investments in the manufacturing sector but huge FDI inflow is also expected as the FM made it clear that foreign companies in a joint venture with Indian companies, having an office in India will also get tax benefits.

Ravi Saxena, Managing Director, Wonderchef

A STEP IN THE RIGHT DIRECTION

I congratulate the Finance Minister for reducing corporate taxes meaningfully. This is a step in the right direction and will bring our rates closer to that in most mature economies. Reasonable tax rates also go a long way in ensuring better compliance. Taken together with the minister's earlier announcements, these measures are expected to spur investment and demand while bringing down the tax burden on companies.

Sumant Sinha, Chairman & Managing Director, ReNew Power

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THIS DECISION WILL PLAY A MAJOR ROLE IN THE ECONOMIC DEVELOPMENT

The government is extensively working towards simplifying the turf for the industrialists in the country. The fourth consecutive relief measure of the government will have a direct implication on the economy ahead of the festive season. The benefit of the rate cut will be passed to the consumers and hence we can expect that the demand will get a significant boost.

The mobile phone manufacturers which are continuously increasing in India will leverage this tax implication and this will improve the production capabilities which will play a major role in the economic development of the country.

Harsh Vardhan, Marketing Head, Jivi Mobiles



RELIEF TO DOMESTIC AND MANUFACTURING COMPANIES

The recent change in corporate tax in India is a very positive and bold step taken by the government. Reduction in Corporate Tax to 25 per cent will spur the economic growth of the country in a big way and will also provide relief to domestic and manufacturing companies to a larger extent. With this positive step, the Indian tax level is now at par with the global tax level and will open doors for Indian companies to compete internationally.

Ajay Durrani, Managing Director, Covestro India

UPDATE

CEMENT INDUSTRY COMMITS TO DISPOSAL OF PLASTICS

Speaking at the Cement Manufacturers Association's coveted conference on alternative fuel and raw materials (AFR) CONSERVE 2019, Secretary of Ministry of Housing and Urban Affairs, Durga Shankar Mishra, thanked the cement industry for supporting the Swacchata hi Sewa mission in October 2019 in its second phase by helping dispose of plastic waste in the cement plants within a 200 km radius.

He assured that subsequent to this initiative the Government was willing to discuss with the cement industry on how to best manage the process of plastic and waste disposal. The conference saw members of Cement Industry along with other stakeholders including senior government officials and technocrats come together to discuss the role of cement industry in contributing to India's energy efficiencies. The event was largely seen as platform to cultivate a collaborative action plan for India's journey towards sustainable goal banking on Cement Industry's track record on adopting and creating sustainable benchmark.

Following an insightful first day, the second day of the conference started with the session on Waste Management to AFR: fast & last mile prerequisites. Some of the critical points to come up during the discussion pertained to segregation, supply, quality, consistency & logistics of wastes in India.

V K Jindal, Joint Secretary of Ministry of Housing and Urban Affairs pointed out the importance of waste segregation, without which none of the waste management goals are possible. He put forth the ever increasing and successful initiatives of the



Government., the takeaway of which had been that over the last five years, the Government had managed to segregate up to 57 percent of the waste that had been collected. This in itself was a big achievement on account of the rising awareness and sense of responsibility, which has been imbibed amongst the societal stakeholders. He also mentioned some of the successful examples of waste segregation and management in the cities of Indore and Vellore. S Sivasubramanian, Municipal Commissioner of Vellore City Municipal Corporation, emphasized the importance of household waste segregation and the need for community engagement. He further illustrated the success of the Vellore model citing how the Vellore city has become dustbin free. Deepak Khetrpal, MD & CEO, Orient Cement Limited, said that the quality and consistency of the waste available to cement industries is very important for effective of waste disposal.



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By Niranjana Mudholkar

DRIVING TRANSFORMATION!

Jan Gurander, Global Deputy CEO, AB Volvo Group, was in India sometime back. The Machinist magazine caught up with him to understand why he is impressed with the speed at which India is transforming.



What's your personal perception of India?

I try to be in India once or twice a year. It is a very interesting and a fascinating market in more than one ways. First and foremost, it is a welcoming country to come to, with its very nice and warm people. Secondly, you also find a lot of competency. Indeed, people here are very talented. Third, I am equally impressed with the speed with which the country is transforming. The agility and the frugal way of working are things that stand out for me. India is a huge country; it's almost like a continent, and imagine it going through an interesting transition. Even though as I hear that the GDP growth rate has relatively moderated in the recent quarters, it is clearly one of the fastest growing large economies. Also, when we look at the investments happening in terms of infrastructure and all the bold structural reforms that are taking place, I think these will make the society more efficient going forward. So, clearly India is a country with huge potential and promise.

Talking from the Group's perspective, how do you see the India market?

It is fantastic! We are obviously active with our Volvo

branded trucks, construction equipment, buses and also Penta engines in this market. In fact, that's what many people think about first and foremost when they think about the Volvo Group. But, obviously we are serving this large market in different ways with different products and services for different end usages, duty cycles and applications. We have a great partnership (JV) with the Eicher Group and our JV is now up into



"We have had very robust last four years from demand point of view. May be there's a little bit of challenge right now but our medium to long-term view on India remains positive. As I said before, with the ongoing structural reforms and investments in infrastructure, I think we would have a good market in India going forward."



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the 11th year of successful collaboration. It is indeed developing very well. This partnership has allowed us to bring not one but two truck and bus brands in this country.

Then, as you know, the bus business here is quite famous. The brand is so strong in the segment that people aspire and ask for Volvo tickets when they want to travel by bus. I don't think there is any other market in the world in the bus segment with that kind of brand recognition!

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Our partnership with the Eicher Group is indeed one of the best things that has happened to us in India. It is indeed a very robust partnership. We are on a journey where we are first and foremost working on a joint venture. We exchange views and we support Eicher in many ways.

Further, we have a very good and growing presence in the construction equipment sector, also with a factory here in Peenya, Bengaluru.

So, from a product range perspective here in India, with the going forward prospects, we obviously have huge potential. One thing that we do not talk so much about is what I call as 'competence centres'. We have our Group's third biggest R&D Centre in India. We also run a big part of our accounting services from India. Then, India is also the second biggest site for connected solutions in the world. If you look at our Technology Competence Centre, they run big and high impact projects today.

Another segment where our trucks are good for the customers and even the customers recognise it, is the mining segment. We do not have substantial presence in the long-haul sector yet, but I think with these

reforms (GST, Motor Vehicles Act, etc) and with the progressive building of infrastructure, there would be a gradual shift since it would make much more sense for the customer and the eco-system to use specialised heavy duty cycle equipment that we provide from the perspectives of total cost of ownership and environment friendliness.

So, I see very interesting market in India, despite the current moderation in demand. We have had very robust last four years from demand point of view. May be there's a little bit of challenge right now but our medium to long-term view on India remains positive. As I said before, with the ongoing structural reforms and investments in infrastructure, I think we would have a good market in India going forward.

There's a stronger push from the government on the e-mobility segment. What's your take on the same?

E-mobility, if I may say so, is the buzz word all over the world today. So, I don't look upon it as unique to India. We, as a Group, recognise that we need to have more sustainable transport for the society going forward. So, when it comes to electric vehicles, we will be a part of that solution. And I don't see a difference between what we do in Europe or what we do in North America, or what we will do for India. I think we as a global provider of these products and technologies, we will be able to provide that in India as well. When the day that we see those changes start to take place, we will be prepared to do this.

How do you look at India as a manufacturing hub?

We have recognised India as a good production base. That is why we have three facilities in Bangalore for Trucks, Buses and Construction Equipment, and also established an important powertrain (engines) plant at our JV near Indore. We are manufacturing and assembling products here with the same quality standards that we use elsewhere in the world. I don't see any challenges on the manufacturing front in India. We even do a little bit of exports of some products out of India also but not much as of now. May be we could be a little more creative on that front and use India more as a production base purely from the strategic location point of view.

It is important to have a long-term presence in a market and we celebrated our 20th anniversary last year in India. We have been consistently present here. Sometimes, we have even struggled in the last twenty years but that's part of the journey. What is important is to understand what works in a market and how our customers in that market can profit. That makes sure that we have a sustainable business model. And when you start gradually to build and follow that model then

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that's how you have your long-term sustainability in a market. We have certainly recognised it with regards to our competence centres and we recognise it also in the context of our factories.

Of course, there's really no limitation on what you can do in India. It is also interesting what we can learn from India. I always say that it is not only us telling people what to do and how to do things; in India, there are a lot of things that we can learn from this society that is developing very fast. There are factors like frugal engineering, something that we can bring back into

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We, as a Group, recognise that we need to have more sustainable transport for the society going forward. So, when it comes to electric vehicles, we will be a part of that solution. And I don't see a difference between what we do in Europe or what we do in North America, or what we will do for India.

our global systems. So, India will continue to play an increasingly important role when it comes to manufacturing as well as our competence centres.

Would you be looking at making more investments in India in near future?

We have already demonstrated a track record as serial investors in India over the last twenty years and will make additional investments as and when the market demands. As of now, we are working on the investments that we have already made. But we will continue build this long-term presence and sustainable presence in India. And that is what we should do because we are here to stay. And we will continue develop and grow with our existing and new customers.

But I am sure that the overall political stability as well as the fiscal discipline, which is developing in the country, also gives you a lot of confidence in this market.

As I said before, there are definitely several things that are going right in India. Obviously, when you put more money into infrastructure and some of these reforms that have taken place are actually very, very good for the development of the country as a whole, not just for the economic development, but some of them are also - if you look more into our industries, and our customers industries - will actually make life easier for them as well. So, I think that's good. I am not a politician, but I think stability in terms of politics is not bad.

Any organisation obviously needs the right kind of people. So what kind of approach do you have with regards to retaining the people that you already have and for developing more skilled workforce is going to end?

I met with our Technology and the IT people; and those who are the ones working for our connected solutions as well with global accounting services. These are the areas where we actually recruit quite a lot of people. And I think, so far, we are perceived as an attractive employer. So, we don't see a huge problem to attract the right people and Bangalore is probably the right place. When it comes to retaining people, obviously there are some areas where the attrition rates are higher than what you see in the Europe or in Asia or in North America. But if we compare that with other companies here, both Indian companies as well as other international companies, I am glad that we have a lower attrition. So, we are, compared to other ones, pretty well off actually. And I firmly believe that that is a little bit due to the fact that people are interested in what we stand for - which is a lot of good values. We are a purpose-driven organisation and I think that attracts young talent.

You have manufacturing here and you also have these competence centres. But, do you also see design and development happening here in India?

Now, we have started by taking total responsibility for a product or it could be a variant of the truck and it is taken care of here, based on our well established and proven CAST philosophy. We do similarly with IT or connectivity solutions. It's not that everything needs to be steered for a project from somewhere in Europe. Here, we have the ability to run projects. And that is what we also do for connectivity solutions. We have highly skilled people working with us across functions including even accounting services. It's a huge development that is taking place here at the Volvo Group

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in India. I visit here once or twice a year and every time when I come here and meet the people, I get to see what has happened between the last few months. Whatever I had seen the last time, it's not standing still. For example, if you had seen 22 robots last time, you will find 50 this time. And the whole willingness to do more is always there.

Tell us something about your partnership with Eicher.

Our partnership with the Eicher Group is indeed one of the best things that has happened to us in India. It is indeed a very robust partnership. We are on a journey where we are first and foremost working on a joint venture. We exchange views and we support

Eicher in many ways. It's a very curious company that also wants to develop its own products and services to become more of a service oriented, customer-oriented company. I think there we do very good exchange of ideas. Then, when you look upon the Eicher trucks, one of the products that we have is the PRO 8000 that was actually developed by Volvo Group from the beginning. I also see other areas where we can work together with Eicher. These could be components, or trucks. We are pretty open to see where it fits. But if you look at a couple of years ahead, I think you will see further areas of cooperation between Volvo Group and Eicher because we are very happy with the cooperation that we have with Eicher Group, and the Lal family, and I think that is great. 

Pennar Industries to double its CDW Tubes Capacity

Pennar Industries Limited is doubling its Cold Drawn Welded (CDW) tubes manufacturing capacity. The company is one of the leading suppliers of CDW tubes to India's automotive and construction equipment sectors.

Pennar Industries will set up a greenfield plant at Hyderabad for the additional CDW manufacturing capacity. Currently, it has an installed capacity to manufacture 1500 MT per month of CDW tubes. The new facility will produce CDW tubes of up to 150 mm diameter and the thickness of 10 mm. The company will incur a capex of INR 65 crore to take its CDW capacity to 3000 MT per month. The new facility is expected to be operational in June 2020.

Commenting on this new expansion, K M Sunil, Vice President - Corporate Strategy said, "The new CDW facility will cater to Hydraulic cylinder tube requirement of consistently growing construction & earth moving equipment sector, including propeller shafts for high pay load heavy vehicles. The precision ERW Tubes from the same plant will be supplied to Structurals for Airport, Stadia, Idlers for Conveyors, Axles for LCV and HCV."

With its backward integration of Steel Strips, Pennar would be producing high strength tubing up to UTS of 900 N/mm². With adverse Diameter to thickness Ratio, coupled with bright annealing facility will give added advantage and offer customers value added services. With its Global presence of sales and marketing offices in US and Europe, Pennar will be exporting approximately 30% of its CDW business volumes.

DENSO Hokkaido's plant to be expanded

DENSO Corporation announced that it will expand the plant of DENSO Hokkaido Corporation, one of its group companies, as part of its efforts to increase production of semiconductor sensors, enhance its domestic production system and boost DENSO group's competitiveness.

DENSO will invest about 11 billion yen by 2025 to complete the expansion and increase production. Construction is scheduled to start in July 2020 and to be completed in June 2021. Production is planned to start in stages in October 2021. The number of employees is expected to increase to approximately 1,150 in 2025.

DENSO Hokkaido manufactures semiconductor sensors for automotive engines, air conditioners, and brake and other relevant systems. DENSO is expanding the plant at DENSO Hokkaido, which has manufactured 500 million semiconductor sensors since its operating, in preparation for increased sensor demand as vehicle electrification and safety systems become more complex and proliferate.

Through this expansion and production of a key automotive technology, DENSO Hokkaido will further improve its capability to meet customers' needs and contribute to the development of the local community.

Aequs accredited with AS9100D certification

Aequs Pvt. Ltd. has been accredited with AS9100D certification. This certification enhances the credibility of a QMS and is intended for organizations that design, develop and provide aviation, space and defence services. The certification is a testament that enhances the organization's ability to cater to a global audience. Rajeev Kaul, MD, Aerospace & Group CFO, Aequs, said "The certification will augment Aequs' status as a preferred OEM supplier among global players. Its use further result in improved quality, cost and delivery performance through the reduction or elimination of the customer's unique requirements, effective implementation of the QMS and wider application of good practices."

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By Niranjan Mudholkar

THE POWER OF ONE!

The rapid integration of the different organizations under one Wabtec umbrella to leverage the scale and portfolio is a key challenge and is essential to drive synergies and operational efficiencies, says **Dr. Sujatha Narayan**, Regional GM, Wabtec Corporation in India & MD, Faiveley Transport Rail Technologies India Limited, a Wabtec company.





Can you give us a brief overview with regards to the operations of Wabtec Corporation in India & Faiveley Transport Rail Technologies India Limited?

Wabtec Corporation has been in operation in India for over two decades. We have fuelled strong growth over the last three years through expansion of our footprint, strategic partnerships and global acquisitions. Two major acquisitions have catapulted Wabtec into one of the largest rolling stock and rail equipment manufacturers globally and in India - Faiveley Transport in November 2016 and GE Transportation in February 2019.

The organization is now coming together as 'One Wabtec' by driving integration of the merged companies, businesses and functions, and leveraging operational synergies. The industry will see this in our unified presence at the 2019 International Rail Exhibition and Exposition (IREE) from October 21 - 24 and we invite your readers to visit our booth and learn more about our company, our products and our people.

There are two parts to the business primarily – Transit and Freight. Transit or passenger movement is under the legacy Faiveley umbrella and sells Brake Systems, Pantographs, Third Rail, HVAC systems, Couplers, Doors and Power relays for Electric Locomotives, Railway Coaches and Metros. Under Freight or goods movement, there are three sub-segments: (1) Freight Components, primarily making Draft Gears, Friction Wedges, Relays, Bogie Mounted Brake systems and Brake Blocks for freight cars or wagons and MTC which makes Metal Bonded Rubber products for Primary and Secondary suspension for Bogies (2) Freight Equipment – part of this business is legacy GE Transportation that manufactures Diesel locomotives (3) Electronics & Digital Solutions for Railway Infrastructure. We also have a robust Services business with integrated offerings tailored to our installed base of 23,000 locomotives in operation around the world.



Two major acquisitions have catapulted Wabtec into one of the largest rolling stock and rail equipment manufacturers globally and in India - Faiveley Transport in November 2016 and GE Transportation in February 2019.

Today in India, we have our operations driven out of five factory locations across the country from Hosur in Tamilnadu just across the border from Karnataka to Baddi in Himachal Pradesh near Chandigarh, to Kolkata and Marhowrah in Bihar where we are building the Diesel Locomotives for Indian Railways. Over the years, we have invested in 360000 Sq-m of manufacturing operations footprint. In addition, we also have over 2000 hardware and software engineers seated in Engineering Centers of Excellence in Bangalore designing locomotives, signaling infrastructure, and various electronics and digital solutions serving both India as well as all our global geographies.

Within the Transit business, we design and assemble Brakes system for Electric Locomotives, LHB Coaches, EMU/MEMU's, Semi High-Speed Train sets and Metro trains. We also have a very diverse product portfolio comprising of Couplers, Pantographs, Heating Ventilation and Air Conditioning systems and Automatic Doors for Indian Railways mainline and the Metro rolling stock. We proudly say that every Indian Metro has something of Wabtec in it!

What are the things that you see working in the favour of Wabtec in India and what are the things that you would like to improve upon?

Indian Railways is going through a rapid moderniza-



tion phase. In the Union Budget 2019-2020, railways received the highest ever capital expenditure outlay. Key announcements also included formulation of a new PPP model to encourage public - private participation, greater investments in building suburban rail infrastructure and significantly higher allocation to Metro projects. Passenger safety, comfort and speed are a high focus area for railways today. On the urban transportation side, several cities in India have seen metro rail connectivity over the last three years and the future is even bigger going by the fine print from Ministry of Urban Development and Ministry of Housing & Urban Affairs. Our cities are expanding very quickly, and urban mass rapid transport systems are clearly a sustainable solution going forward.

Both the Indian Railways Mainline and Urban Metro Rolling Stock segments provide an enormous opportunity for the company to grow. Wabtec has a very diverse range of products that go into Electric and Diesel Locomotives, LHB coaches, Semi High-Speed Train sets, EMU's and MEMU's and Metro rolling stock. The company has a very large local manufacturing footprint and has been investing continuously in enhancing capacity. Wabtec strongly supports the 'Make in India' initiative of the Central Government and has established a strong local supplier base to cater to the needs of railways and metros. We would further look to improve upon our local content in the different products, build on our engineering and R&D strengths and introduce the latest global technologies in India. We are also actively working with our group companies and engaging with our customers to introduce a plethora of new products for the India rolling stock market.

What are the key challenges faced by the Company and how are you addressing them?

Wabtec is today one of the largest global players in the Rolling Stock and Rail Equipment industry after the mergers with Faiveley Transport and GE Transportation. It is also amongst the largest players in the rail

“

We must partner with the market and our customers to understand the value of engineering, quality, project management, field service and all support that goes into delivering and maintaining a reliable product.

transportation market in India. Our challenges are both within as well as from the market.

The rapid integration of the different organizations under one Wabtec umbrella to leverage our scale and portfolio is a key challenge and is essential to drive synergies and operational efficiencies. We are bringing together employees from very different companies and different levels of the product chain and uniting them with a common vision – this is the key imperative for us for the near future.

Externally, as the Indian rail transportation market is growing, it becomes attractive to supplier companies all over the world. With this, our key challenge is to help prevent the market from slipping into a commodity focus with low price and low quality. We must partner with the market and our customers to understand the value of engineering, quality, project management, field service and all support that goes into delivering and maintaining a reliable product. We are cognizant of the fact that we must continuously challenge ourselves to take actions that will allow us to remain relevant and maintain a leadership position and we also believe we must support the Rail transportation market in India with expert counsel to maximize performance, reliability as well as cost competitiveness.

We have identified introduction of new products for Indian Railways as a key strategy for the future. Here, the biggest challenge we face is that a new product or innovation is treated the same as an existing product in terms of the tendering process. We believe this can be limited to finding high performance solutions that are needed to modernize and solve critical problems in the network. We would like to work with IR to create a separate innovation/new product introduction process; one that gives innovative companies that are willing to invest an impetus to develop products that are uniquely suitable for the Indian market – with attention to engineering that delivers the performance and reliability required for this market at the best possible cost.

We always face the challenge of strategic realign-

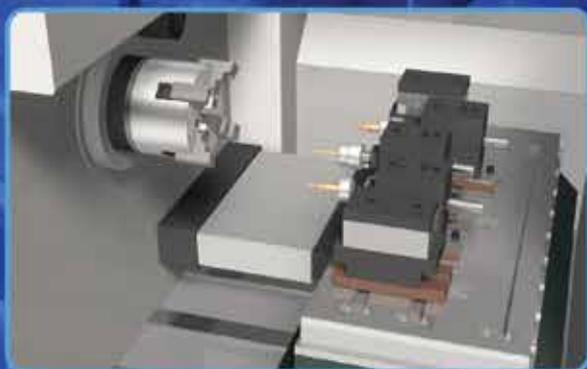
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ment within the railways market in India and the volume demand for products going up and down with limited lead time. The onus for us is to build smart factories that can accommodate these surges in demand without being impacted financially.

How do you view Indian government's ambition to create high-speed network? What role do you see Wabtec playing there?

Well, it is a realistic ambition to take for our country, but infrastructure has to be put in place to make a high-speed rail network operational. The success of Train Set 18 or Vande Bharat Express has improved speeds to 160 km/hour from about 110 – 130 km/hour. Train Set 18 will run on the busiest routes and replace the Shatabdi and Rajdhani coaches. IR is committed to have 40 such semi high-speed train sets manufactured by CY 2022. This will not only reduce journey time across cities but also significantly enhance passenger comfort. Having said this, overall modernization has to progress rapidly. The idea is to move towards higher speeds and separate out the passenger and freight corridors to maximize revenues for IR. The dedicated freight corridors will also be commissioned. This should help IR to grow both passenger and freight revenues that augurs well for diverse product manufacturers and integrators like Wabtec.

Our role as an organization is to support the expansion with the right product and solutions that in turn will fuel our business growth. Our locomotives for example are in operations in the northern, western and eastern corridors. They are not just efficient in heavy haul but are also extremely user friendly as per the feedback we have got from the loco pilots. On a similar note, a lot of our products from pantographs to brake systems are in commercial service across the country.

Wabtec also offers a wide range of signal and track products including switch machine layouts, rail gear, Positive Train Control, Design Engineering and System integration to the freight and commuter rail industry.

“

Do not attribute everything that is happening to you is due to your gender, neither should you give up the power of expecting from your company what is required for you to be a competent working woman.

The digital product and solutions portfolio may enable Indian Railways benefit from the Internet of Things (IOT) faster. Wabtec also has Condition-Based Monitoring systems that would enable IR to perform predictive maintenance by monitoring the health of bearings and wheels.

Tell us about Wabtec India's overall manufacturing capabilities and capacities. Do you have enough capacity to sustain the huge growth that the Indian railways sector is likely to see in the coming times with regards to both the general railways as well as Metro projects?

Currently, we have five manufacturing sites in India. While Marhowra is the primary factory that produces the Diesel Electric locomotives, with a capacity to produce 120 locomotives a year, we have the erstwhile Faiveley Transport factory in Hosur which is amongst the only Wabtec site in world to manufacture five transit subsystems – Brake systems, Pantographs, Couplers, Airconditioning systems and Door Leaves in one location. The site in Baddi, Himachal Pradesh caters exclusively to LHB coach equipment for the IR coach factories namely Axle Mounted Disc Brakes system and Brake Discs. In Kolkata, we have a JV between Wabtec and Texmaco which manufactures friction products, Bogie Mounted Brake equipment and Draft Gears including some exports. Our group company MTC has a manufacturing facility for Metal Bonded Rubber Products at Bangalore. Over the years, we have invested in 360000 Sq-m of manufacturing operations footprint.

Wabtec is making significant and continuous investments to enhance capacity and improve efficiency and productivity specially to meet the needs of IR where there is an exponential increase in production of Electric locos and LHB coaches. We are also working with multiple rolling stock car builders for both domestic and export projects and have established capacities for the different subsystems in our portfolio in line with the business plans of our customers. New product



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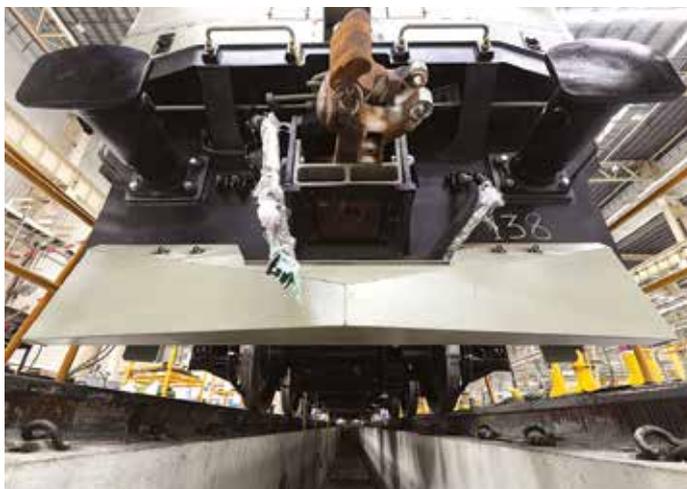
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introductions and localization in India based on customer requirement is highest in priority for us. As a customer-centric organization, we will continue to invest in capacity and engineering innovations across our product range in all our existing locations.

What is the percent of local content used in your India made products at present?

The local content is significantly high and varies from 40 percent - 95 percent across businesses we operate in. For the locomotives, about 70 percent of the parts are manufactured or locally sourced from Indian suppliers. For Electric locomotives and LHB coaches, we have over 85 percent local content in Brakes system for Electric Locomotives and in Axle Mounted Disc Brakes System, Brake Discs and other ancillary Brake system components and equipment for LHB coaches produced by Indian Railways. We are the leading supplier of systems and solutions for India to all Metro rolling stock car builders from BEML to Bombardier and Alstom, which also have factories in India. Our products for metro rolling stock including Brakes systems, Couplers, Pantographs and Air Conditioning systems have reasonably high local content well above 50 percent going up to 65 to 70 percent depending on the product configuration and customized engineering design for each car builder. This is supported by strong after-sales support through regional Sales and Marketing offices and presence of over 150 Field Service Engineers across the country who are continuously catering to the needs of zonal railways of IR and Metro.

Are you also exporting from India?

We are exporting our Heating Ventilation and Air Conditioning systems to Sri Lanka and Nepal through ICF, Chennai which manufactures Diesel EMU train sets for Sri Lankan Railways. This is an order we received from Rail India Technical and Economic Service (RITES). We are also supplying our Brakes system for the Sydney Metro for Alstom, which is producing its



Our business this fiscal has been very encouraging, and we have seen revenue growth beyond our projections in the products segment for Indian Railways and also witnessed significant growth on the Services side of the business.

metro cars at Sri city. We are also exporting our Brakes system and Couplers for some other global projects through the Korean car builder Hyundai ROTEM. We have also exported our Pantographs to China Railway Rolling Stock Corporation (CRRC), which is manufacturing trains in China for the Nagpur Metro project.

When do we see Wabtec adding 'Design in India' and 'Engineer in India' to 'Make in India'?

You may be surprised to know that we have over 2000 hardware and software engineers seated in Engineering Centers of Excellence in Bangalore designing locomotives, signaling infrastructure and various electronics and digital solutions serving both Indian as well as all our global geographies. The legacy GE locomotive for Indian Railways was designed in India. We are also doing a lot of "Design and Engineer in India" for our respective subsystems. We are supported very proactively by our Centers of Competencies to train our engineers periodically so that they are acquainted with the latest global technologies. Development of talent in Design Engineering and building self-sufficiency is a key priority for our organization and we are investing significantly in it.

How's been the business so far in the ongoing fiscal. In line with the projections?

Our business this fiscal has been very encouraging, and we have seen revenue growth beyond our projections in the products segment for Indian Railways and also witnessed significant growth on the Services side of the business due to higher installed base and strong customer engagement. The metro projects business has also been stable.

What is your personal vision for the Wabtec Corporation in India & Faiveley Transport Rail Technologies India Limited and where do you see it five years down the line both in terms of the brand and revenues?

When I joined Wabtec/Faiveley in August 2017, one



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AVIATION

AUTOMOTIVE



BLISK

SINGLE FOIL

TURBO CHARGER

INJECTION SYSTEM

Process / Machine Development

- Material: Nickel-based alloys / Titanium



Process / Machine Development

- Material: Nickel-based alloys / Titanium / Titanium Aluminide



- Turbine wheel
- Turbine casing
- Thrust bearing
- Valve disk, etc.



- Fuel injector
- Valve plate
- Pump casing & Injector
- Rail, etc.



DISC

DIFFUSOR

VALVE TRAIN

TRANSMISSION

Process / Machine Development

- Material: Nickel-based alloys



Process / Machine Development

- Material: Nickel-based alloys



- Connecting rod
- Camshaft & Cam piece
- Cam
- Piston, etc.



- Synchronizer body
- Synchronizer ring
- Drive shaft
- Parking lock, etc.





of the first things I worked on was the Strategic Plan, which is a five-year blueprint on where to take this business in India. In that plan, we articulated a clear vision – ‘To become an established leader and the most comprehensive solutions provider to the Indian Rail Transport market. To be a highly respected and valued brand in India to our customers, suppliers and employees.’ Our vision continues to be the same and I believe we are in the path of this vision even ahead of schedule with the GET organization joining us.

There is a huge focus on digitalisation across the business world. How do you see this impact the Railways sector, both globally and in India?

For Railways there is a huge potential for digitization. A conservative estimate towards this could be at 3.5-4 billion USD. Wabtec is looking at this opportunity as the railroad goes from automated to autonomous operations. The foundation of such technologies is already in revenue service globally. We are leveraging data to improve efficiency, performance and productivity of trains. Our brake systems are one such example at the product level wherein it can have an automated alert system inbuilt. Similarly, the locomotives in operations are also digitally monitored through Remote Diagnostics. A comprehensive and consolidated control architecture exists which enable higher reliability of the system.

On similar note, Wabtec’s Interoperable Electronic Train Management System (I-ETMS) provides “Pos-

itive Train Control” (PTC) and “Communications Based Train Control” (CBTC) solutions which can be applied for Indian Railways, with more features and lower cost than European Train Control Systems (ETCS). This is based on Global Navigation Satellite System (GNSS) which does not require track sensors. It is also highly interoperable given multiple IP based communications systems which allow use of LTE, WiFi and other data radio systems. The savings opportunities are extremely high for connected railways.

The railways as well as manufacturing sectors have both been male dominated. However, women are now making inroads in both the sectors. What are your views on the same?

I have been asked this question on various occasions all my career ... I don’t see any reason why the Railways or any manufacturing sector should be male dominated, especially in the modern highly automated workplace. It certainly has nothing to do with competency, capability or dedication. I surmise it to be that this sector mostly employs mechanical and electrical engineers, both streams bring dominated by men from college itself... I am certain that women will catch up over time and we see that happening already...

From my perspective, when one steps into the workplace, the identity of whether you are a male or a female is irrelevant. In the modern workplace, if you have the intelligence, knowledge, work ethics and the right attitude, then gender is immaterial, and your career will progress on your merit. This has personally been my experience my entire professional life. While I know that gender-based discrimination exists in the workplace in India as well as the globe, my advice to women all over the country is to be less conscious of being a woman in the workplace. Do not attribute everything that is happening to you is due to your gender, neither should you give up the power of expecting from your company what is required for you to be a competent working woman. 



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ZERO ACHIEVEMENT!

Toyota Kirloskar Motor is ensuring zero plastic waste directly to landfills and has also achieved a recyclability of 96 percent at its operating plant at Bidadi, Karnataka



well-defined challenges to be achieved by 2050, Toyota has taken upon itself to establish a recycling-based society and systems, inspired by its philosophy of Toyota Earth Charter, which encourages pursuing production activities that do not generate waste.

Aligning its activities with the Toyota Environment Challenge 2050, TKM established a robust waste management system at its operating facility at Bidadi, in Karnataka. Its five-year action plan derived from the Toyota Earth Charter is also in place which speaks on “Reduction in Hazardous

Waste Generation” and “Continuous Efforts to achieve Zero Waste to Landfill”, giving the reduction targets. With these efforts, TKM is ensuring zero waste directly to landfill and achieved a recyclability of 96 percent to date, for the wastes which are generated from the manufacturing operations.

Commenting on the initiatives taken by TKM, Masakazu Yoshimura, Managing Director, Toyota Kirloskar Motor said, “Keeping in-line with our global Toyota Environment Challenge 2050 and aligned with honorable Prime Minister’s nationwide campaign to limit the consumption of single-use plastic, we have proactively implemented several initiatives encouraging our stakeholders to reduce, recycle and reuse, as a step towards a better tomorrow.” He further added, “Environment consciousness is etched into Toyota’s ecosystem, right from our supply chain to our management and employees to the beneficiaries on the ground ensuring a sustainable impact. Through this initiative, we are committed to build a sustainable waste management system to reduce the negative impact of single-use plastic.”

As part of the project, TKM also conducted an extensive study to find the alternative options for waste minimization to utilize biodegradable waste (Non-Hazardous) in an eco-friendly manner. The study involved testing various composting techniques, and the team

Toyota Motor Corporation devised a program called the ‘100 dismantler project’, where Toyota is developing 100 model dismantling facilities around the world to promote material recycling of the end-of-life vehicles.

Over the last one decade, plastic pollution has become a worldwide phenomenon and its ramifications in terms of waste management have become a critical issue that the world is facing today; both from the perspective of resource availability and its impact on our eco-system. Reports on waste management by the World Bank suggest that by 2050, the world is expected to generate 3.40 billion tons of waste annually, increasing drastically from today’s 2.01 billion tons. While the East-Asia and Pacific region are likely to generate close to a quarter (23 percent approx.) of all the waste and South Asia will more than double its waste stream.

Toyota being a responsible corporate, envisioned the increasing complexities of this crucial issue and globally announced the “Toyota Environment Challenge 2050”, a one-of-its-kind long-term initiative aiming to minimize carbon dioxide emissions and have a positive impact on the environment. As part of the six

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arrived at 'vermi-composting', a process of composting using various worms, usually red wigglers to create a heterogeneous mixture of decomposing waste. As a result, with the use of this technique, of the 6 MT of bio-sludge generated at the plant, 4 MT was converted to manure (fertilizer). This helped in reducing the landfilling cost up to 28.8 lakh per annum and also curtailed the emissions up to 18 tCO₂e/annum.

Understanding the extent of issues of the plastic wastes and global drive for the establishing the circular economy, in 2018, TKM accelerated its efforts towards reducing the plastic waste and started a company-wide



TKM's five-year action plan derived from the Toyota Earth Charter is also in place which speaks on "Reduction in Hazardous Waste Generation" and "Continuous Efforts to achieve Zero Waste to Landfill", giving the reduction targets."

drive '5R'. With its well-defined strategy for identification of the Kaizen's (continuous improvement), TKM promoted the reduction activities involving its employees. Various activities taken up as part of the 5R initiative yielded a reduction of 45 percent in plastic footprint over the period of June 2018 till June 2019.

The company has also implemented elimination of plastic in Service Parts Operation. Thorough studies are being conducted to stop plastic usage and introduce alternate material like paper and cotton bags for primary and secondary packaging, strapping etc. Overall implementation of the campaign to ban plastic usage/introduction of alternate packaging material across



Ecozone also houses the Value Theme Park dedicated to educate the stakeholders on the importance of waste management, solutions for effective value creation from waste and ways to move towards a Zero Waste Society.

suppliers will start by January 2020.

With the auto industry going through a dynamic revolution, End-of-Life Vehicle Management is proving to be one of the biggest challenges in the coming decades. TKM conducted a detailed study of the existing dismantling markets in India, only to realise that the prevailing informal sector can pose a severe threat to the environment. A car is an assembly of more than 800 parts and can be dangerous to the environment if disposed unscientifically. Considering this issue, Toyota Motor Corporation devised a program called the '100 dismantler project', where Toyota is developing 100 model dismantling facilities around the world to promote material recycling of the end-of-life vehicles.

In addition to making ever-better cars, Toyota is committed towards a greener tomorrow and establishing a future society in harmony with nature. Guided by the Challenge 2050, TKM has also developed an "Eco Zone" in its premises at Bidadi. It is an outdoor environment learning center, specially designed to provide experiential learning to stakeholders. Under this project, TKM aims to connect "Children with Nature", promote environmental awareness beyond classroom learning and inculcate a behavior towards the conservation of our environment. So far more than 1900 students from 52 schools and colleges have been a part of this training at the Ecozone.

Further, Ecozone also houses the Value Theme Park dedicated to educate the stakeholders on the importance of waste management, solutions for effective value creation from waste and ways to move towards a Zero Waste Society. The theme park highlights the key issues of waste management in the society and industry, and provides a platform for triggering discussions to evolve solutions.

TKM has been able to prove its eco-commitment with continuous improvements in Environmental Performance year-on-year. It will further continue its various eco-initiatives to bring about a positive change in the attitude towards creating a sustainable, cleaner and a greener tomorrow. 

Source: TKM



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Birla Cellulose to reduce water intensity by 50 percent



Birla Cellulose has targeted to reduce its water intensity by 50 per cent by 2025 from the baseline year 2015. This will be achieved by the application of new technologies based on the principles of 3R (Reduce, Reuse, Recycle). The best practices in the area of water management and innovations that allows multiple times reuse of water, and technologies such as membrane processes to clean up and recycle the wastewater have been applied across all fiber sites of Birla Cellulose successfully reducing the water intensity by 30 percent from the baseline of 2015. This has resulted in some of the sites creating new benchmarks for water intensity in the global viscose industry.

Dilip Gaur, Business Director - Pulp and Fiber Business, Aditya Birla Group informed that climate change and water scarcity are the two biggest concerns of the global community today and need to be addressed by concerted efforts. A strong focus on reducing fresh water intake can result in fresh water being available

for alternative uses.

GOING BEYOND REGULATORY NORMS

Reducing fresh water intake also leads to equal reduction of the waste water discharged, thus creating large positive impact on the environment. Dilip Gaur added that Birla Cellulose is in the process of applying the most stringent norms across all its fiber manufacturing sites, by going beyond the applicable regulatory norms, and implementing the European standards (referred to as EU BAT norms) for wastewater discharge.

Water is the lifeline of every living entity on earth and is the most important shared resource on the planet. Water is a key resource for economic and social development and is vital to maintain health, grow food, generate energy, manage the environment, and create jobs. However, the world is grappling with severe water scarcity, as per a United Nations study, 2.1 billion people or about 40% of the global population live in water scarcity today. Textile industry is one of the largest consumers of water during production of fiber and fabric and for irrigation of crops like cotton, which consume huge amount of water. United Nations Sustainable Development Goal 6 calls for ensuring the availability of clean water and sanitation for all by the year 2030.

Aligned to the United Nations SDG 6, Birla Cellulose is committed to improve the availability of water, the most precious shared resource, for the people and the planet. It is in alignment to the strategy of Birla Cellulose of making the business more sustainable by being the leader in implementation of the sustainable business practices in the manmade cellulosic fiber industry.

Metso to deliver recycling plant to Tata Steel

Metso has been awarded with an order to deliver a Texas Shredder™ PS for Tata Steel's upcoming steel scrap recycling plant. The order marks the first steel scrap shredding facility in India.

Tata Steel Limited is one of the world's largest steel-producing companies, with manufacturing operations in 26 countries. Metso and Tata Steel have a history of more than 25 years of successful cooperation in India.

The value of the order is not disclosed, and it was booked in second quarter of 2019.

"We are very honored that Tata Steel is relying on our proven metal shredding technology, which is among the most comprehensive in the industry. Many of our processing equipment solutions are globally recognized as the benchmark for their product types," says Keith Carroll, Director, Business Development, Metso Metal Recycling.

Grundfos India encourages water sustainability

Grundfos has charted its path in support of the United Nation's Sustainability Development Goal (SDG) 6 as its key focus area, to ensure availability and sustainable management of water and sanitation for all. Cognizant of the given crisis, Grundfos India recognizes the power of integrated innovative water management solutions for everyday business and way of life. Through its association with this Summit, Grundfos India aims to inspire government, industry leaders and stakeholders to deploy intelligent, innovative and energy-efficient digital techniques.

Speaking on the same at a conference session on 'Scalable community-led local initiatives' Saravanan Panneer Selvam, General Manager, Grundfos India said, "Given India's escalating water crisis, there is an urgent need to invest, build and adopt integrated and innovative water management solutions. It is necessary for us to also look at decentralized, community led solutions for sustainable water and wastewater management. This will be possible only through the close collaboration of technology providers, community leaders and the Government. The focus has to be on how to sustainably use, reuse, recharge and recycle water within communities. We also need to ensure that communities are equipped to address climate change as well – be it depleting water sources or flooding".



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By Niranjana Mudholkar

POWERED UP FOR GROWTH!

The potential for the India market is very encouraging with a huge demand expected in infra and other areas leading to a demand for commercial vehicles, construction equipment vehicles and other related equipment, says **Li Jian**, MD, Shangdong Heavy Industry India Pvt. Ltd



“Presently, we cater to Nepal, Bangladesh, Sri Lanka and Maldives. However, we intend to use our India base to offer many of our platform products to the Middle East, Africa and South East Asian countries.”

Shandong Heavy Industry India Pvt. Ltd (SHIG) began in 2006 with trading & a manufacturing plant in 2014. How’s been the journey so far?

The Indian consumer has typically been brand loyal to quite an extent, but over the last decade has started to recognize high-end engineering products that are being offered by new players in the arena. We offer diesel and gas engines under renowned brands like Weichai, Baudouin, and are the largest manufacturer of diesel engines in the world with a capacity of over one million engines per annum. It is not an easy task to maintain the number one position year-on-year, thanks to our strong R&D wing, which enabled us to roll out engines

with quality & performance to our esteemed clientele. The focus on after-market-support has also played a pivotal role. Incidentally, we have a market share of over 50 per cent in the marine segment, which is highly sensitive to performance with the fishing vessels operating days on end, uninterrupted in the high-seas.

We have strategically ventured from trading into manufacture of the diesel engines up to 1200 HP from our state-of-the-art plant in Pune, Maharashtra from the year 2014 and are now equipped to offer engines for various applications, which include engines for trucks & bus, earth moving & construction, power generation and so on.

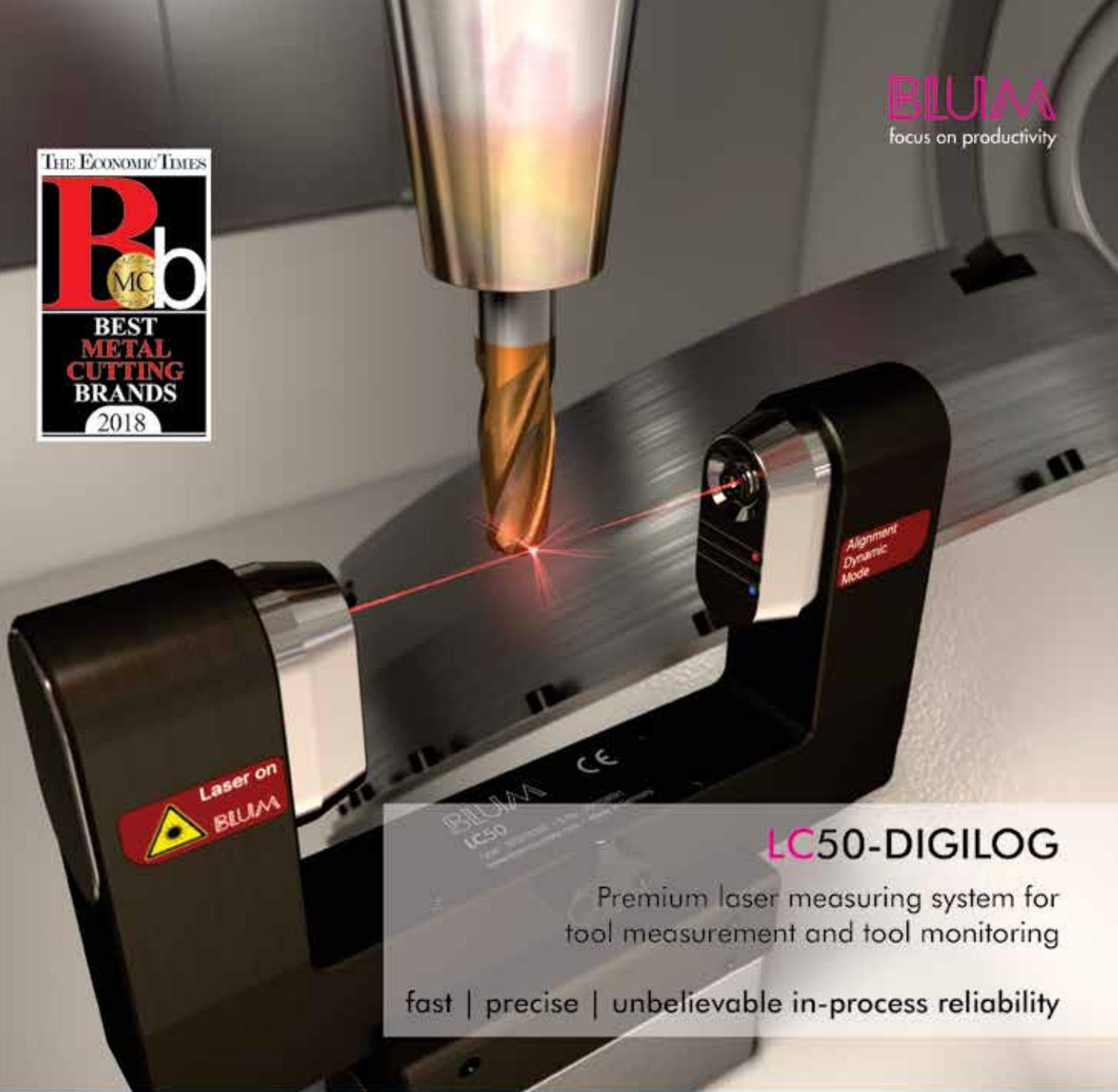
The economy both globally as well as in India has been going through a slow phase for the last eight months or so. How has this affected SHIG’s business in India?

Presently, we cater with our engines mostly to the marine and power generation markets and to some extent to the commercial machinery segment. The power generation market has its ups and downs based on the economy, but here again, our focus is mainly on the higher segment of 200 kVA to 2500 kVA with the high-end Baudouin range competing with limited players. We have made in-roads with the Baudouin range over the last 18 months and it is a brand to reckon with. The marine segment was affected over the last 18 months with its cyclic drop in demand, but is now on the revival mode.

Given the current economic scenario, what is your long-term outlook for the Indian market?

The potential for the Indian market is encouraging with a huge demand expected in the infra & other related areas leading to a demand for commercial vehicles, construction equipment vehicles & other related equipment. We are studying the specific market potential in various segments which will act as a growth driver and intend to enter into the market in the short run.

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Who are SHIG's key customers and what kind of products are you supplying to them at present?

In the marine segment, Weichai has a strong presence and is No. 1 in the Indian market with over 50 percent market share. We have a strong sales and service network across the coastline to provide effective after-market support.

In the Power generation segment, we have corporate alliances, including Ashok Leyland with whom we have aligned to promote the Baudouin range of power generation engines up to 2500 kVA in addition to other OEs (Original equipment assemblers). The G Drive engines are assembled into complete diesel generating sets, sold & serviced by our channel partners. Our range of engines are also operating fitted in special equipment like Cranes, Wheel loaders, Dozers, etc. and our OEs include Sany, XCMG, Liugong, L&T, to name a few. Some of our other group products include Hande axles, Fast Gearboxes which are being procured by some of the major players including Volvo Eicher, for specific models of their vehicles.

Tell us about your manufacturing plant in terms of its size, infrastructure, capabilities and capacities.

Our present capacity is 10,000 engines per annum in phase 1. We are presently concentrating on power nodes from 180 kW to 500 kW and will extend the range below 180 kW and above 500 kW shortly. We have over 80,000 diesel and gas engines supplied to highly satisfied customers and operating in the India market for power generation and marine applications supplied from the year 2006. We have commissioned a test bench to test engines up to 2000 kW power range too. We have in place an expansion option to cater to the increased demand.

Tell us about your exports from the Pune facility.

Presently, we cater to the Nepal, Bangladesh, Sri Lan-

ka and Maldives. However, we intend to use our India base to offer many of our platform products to the Middle East, Africa and South East Asian countries.

Which are the different products and brands that you are manufacturing at the Pune facility currently and will you be looking at expanding the portfolio in near future?

Currently, we manufacture engines for various applications and all other products are offered through the trading route.

Would SHIG also be open to joint ventures and / or technical collaborations with companies operating in the Indian market? If yes, then what kind of partners would you be looking at?

We are already in discussions with large engineering corporates for offering our high-end products & services, which may fructify as supply of aggregates in CKD/SKD form, or entering into a JV mode, collaborations too. The products include drive-train aggregates such as engines, gearboxes, axles, fully built trucks & buses, etc

The Indian automotive industry is all set for a definite transition from BS IV to BS VI engines. Is SHIG ready to cater to this new emission norm?

Weichai with technical collaboration has upgraded its engine portfolio to the Electronic HPCR platform in the year 2009 and have a large volume of engines operating in the field. The group has got five R&D centres located globally with over 4000 R&D engineers on board.

Currently, the range of diesel & gas engines from the WEICHAI and BAUDOUIN portfolio of 2.3L to 17L meets the latest Euro VI / BS-VI emission norms and are currently being offered to our customer base in Europe and USA. We may be in a position to offer our engines for specific nodes required by Indian players and we are open to entering into a tie-up or JV to manufacture the engines in India.

How has been your personal journey in India?

I have been in India from the year 2008. I find India unique with its rich heritage and culture and the people are warm and friendly. I also relish some of the Indian cuisine.

What are your views on our Group's industry-oriented initiative like 'The Festival of Manufacturing'?

This is a really good initiative as it is one of a kind where there is a lot of emphasis on the manufacturing industry. There are a lot of things that we manufacturers do that needs to be celebrated and showcased to people and this is the perfect platform for us. 

ERGONOMICS FOR THE MODERN FACTORY

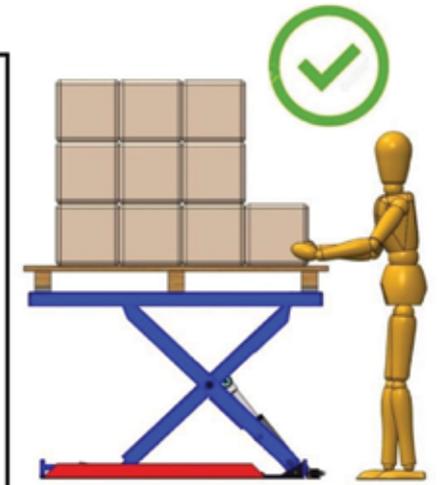


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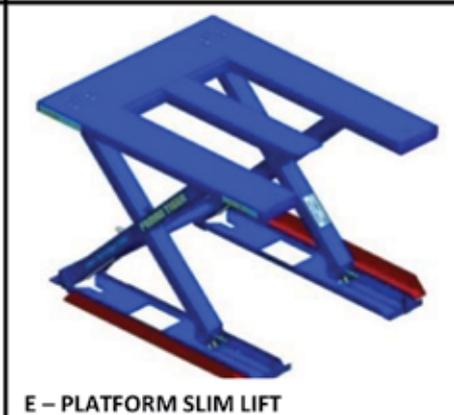


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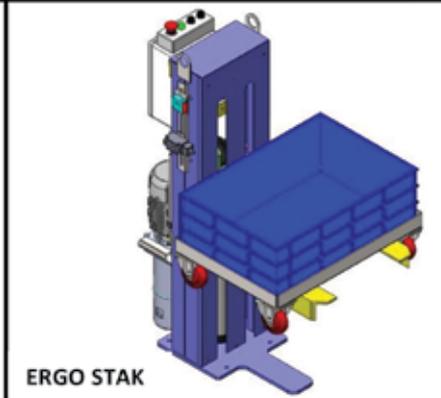
CONVEYOR TABLE SLIM LIFT



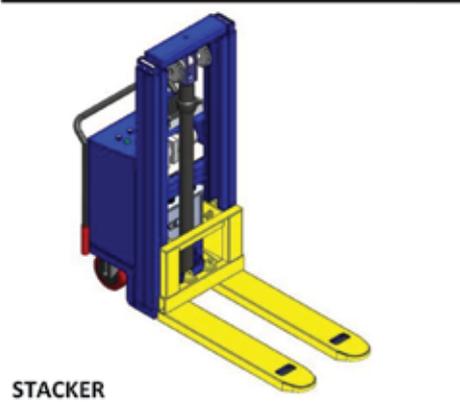
ROTARY TABLE SLIM LIFT



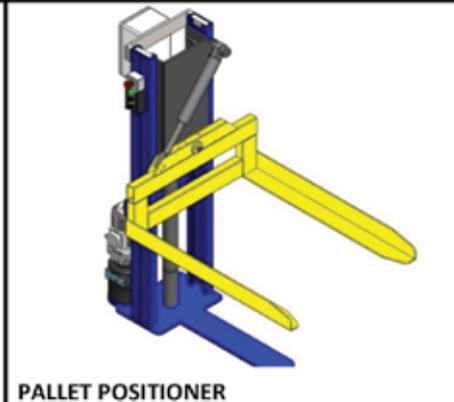
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TAKING AN INTEGRATED APPROACH!

The Volkswagen Group India has secured the prerequisite regulatory and statutory approvals to merge its three passenger car subsidiaries as 'Škoda Auto Volkswagen India Private Limited'



"With this merger, we plan to combine the technology and management expertise of our team in India and realize our true potential in a challenging, competitive environment. We want to further strengthen our presence in India, ensure the profes-

sional development of our employees and safeguard sustainable profitability for our dealers."

Gurpratap Boparai, Managing Director of Škoda Auto Volkswagen India Pvt. Ltd.

The Škoda Auto led Volkswagen Group India having secured the prerequisite regulatory and statutory approvals, announced the transformative merger of its three passenger car subsidiaries - Volkswagen India Private Limited (VWIPL), Volkswagen Group Sales India Private Limited (NSC) and Škoda Auto India Private Limited (SAIPL). The merger of three former Volkswagen Group entities is an important milestone in the 'India 2.0' project. The merged entity will be referred to as 'Škoda Auto Volkswagen India Private Limited' (SAVWIPL). The entity will be led by Gurpratap Boparai, who will assume the role of its Managing Director. The company will be headquartered in Pune, Maharashtra, operate

two production facilities in Pune and Aurangabad, and have regional offices in Mumbai, New Delhi, and other locations across the country. The integration will make more efficient use of the existing synergies in this important growth market.

Bernhard Maier, Škoda Auto CEO, explains: "The operational launch of Škoda Auto Volkswagen India Private Limited marks an important milestone in the INDIA 2.0 project. This merger creates one of the key prerequisites for working together more efficiently at all levels and achieving our long-term goal: to gain significant market shares for Volkswagen and ŠKODA by 2025. We will now proceed in a series of quick steps: As early as next year, we will be presenting a specific outlook for our India 2.0 model portfolio at the Auto Expo in Delhi."

Gurpratap Boparai, MD, Škoda Auto Volkswagen India Pvt. Ltd., adds: "With this merger, we plan to combine the technology and management expertise of our team in India and realize our true potential in a challenging, competitive environment. We want to further strengthen our presence in India, ensure the professional development of our employees and safeguard sustainable profitability for our dealers."

The emergence of the merged entity with a strong brand portfolio – Škoda Auto, Volkswagen, Audi, Porsche and Lamborghini is envisioned to serve across market segments and budgets. These brands shall retain their distinctive identities, dealer network as well as implementing their own customer experience initiatives. However, they will be pursuing a shared vision and strategy for the Indian subcontinent.

In July 2018, the Volkswagen Group announced investments of around one billion euros as part of the 'India 2.0' project. In January 2019, a new technology centre was opened in Pune, India, where vehicles will be developed based on the localized MQB-A0-IN subcompact platform, tailored to the wishes and requirements of local customers. The first step in the model campaign will involve Škoda Auto Volkswagen India launching a mid-size SUV model that will be available from both Škoda and Volkswagen. 

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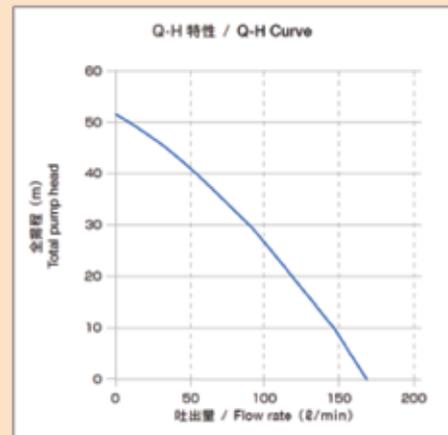
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By Swati Deshpande

OPTIMISTIC ABOUT FUTURE!

We are expecting growth during the last two quarters of the current financial year says **V. Anbu**, Director General & CEO of Indian Machine Tool Manufacturers' Association (IMTMA).



Industry 4.0 is an evolutionary concept of making use of technology for enabling devices and equipment to become communicative, proactive and smarter. Artificial intelligence plays an important role in this.

How is the machine tools market faring in India?

Machine tool production for FY2018-19 is estimated to be around Rs. 9,600 cr. and consumption was around Rs. 21,000 cr. For the last three years machine tool industry in India has grown at around 15–20 per cent year-on-year.

Indian machine tool industry moved up by one notch in both consumption and production in the global machine tool producing and consuming countries as against last year. As per the latest Gardner's 'World Machine Tool Survey', India is ranked 7th in consumption and 9th in production, globally.

For enhancing the growth of the manufacturing industries, specifically machine tool industry, Government of India and Government of Karnataka are jointly developing a fully integrated 'Tumakuru Machine Tool Park' (TMTP), in Vasanthanarasapura Industrial Area, near Tumakuru, Karnataka in a campus of over

500 acres. IMTMA member companies are setting-up their industry units in TMTP.

Artificial Intelligence and Industry 4.0 are playing a big role in the global manufacturing segment. How do you look at the adoption of such technologies in the Indian manufacturing segment?

Manufacturing industries are adopting digital technologies and for a long time are using software tools for designing, drafting, manufacturing and supply chain. With the advent and use of sensors, actuators and smart devices, which are becoming more affordable, devices, machines and sub-systems are getting networked and are providing communication to the outside world in dynamically. The 3 C's (Connect, Communicate and Collaborate) provide status information in real-time which is used for status display and monitoring of machines and processes primarily and can be used for operation, maintenance and decision making in a factory environment.

Industry 4.0 is an evolutionary concept of making use of technology for enabling devices and equipment to become communicative, proactive and smarter. Artificial intelligence plays an important role in this. Digitisation and usage of software and hardware in a manufacturing environment is industry-specific and is the primary reason for incremental improvement as well as for slow growth and adoption in industries. The progress was slow in the initial days but is gaining pace with Government of India shedding light on these technologies and propagating to adopt them in industrial sectors.

What influence does mechatronics have on the machine tools?

Mechatronics is the integration of mechanical and electronic systems and when coupled with information technology it is termed as 'Cyber Physical System'. Machine tools are the manifestation of mechatronics and technological developments in mechatronics have a huge impact on machine tools in terms of making it efficient, accurate, and self-monitoring and is part of technology aspect of Industry 4.0. Knowledge and

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adaptation of mechatronics helps in designing of CNC machines and spectrum of manufacturing activities involving assembly, proactive maintenance, performance testing, automated inspection, quality control, etc.

With the growth of technological innovations & breakthroughs mechatronics has come to the industrial forefront integrating mechanical, electronics & information engineering in the design of products & systems.

What impact does slowdown in auto industry have on the machine tools industry? How do you look at the current market condition? And what are your expectations from 2020?

Although we are witnessing some challenging times due to the current slowdown of the auto sector, we are expecting growth during the last two quarters of the

//

Machine tool industry is also looking to serve defence and aerospace sectors which are opening up for private companies in a big way apart from railways and electronics industries. Machine tool industry is also looking at prospective international markets in a cluster based approach for future prospects.

current financial year. Some of the measures initiated by the Government of India such as short-term boost for auto sector (BS-IV cars will remain operational for their registration period), ease of doing business and FDIs, and reduction in corporate tax for MSMEs are expected to prop up the auto sector which in turn will assist machine tool industry. As machine tool industry aligns its business in the transition period, we expect better business in the coming future. The on-going disruptions also present an opportunity to look towards new sectors and expand our product base through in-

tensive R&D. Machine tool industry is also looking to serve defence and aerospace sectors which are opening up for private companies in a big way apart from railways and electronics industries. Machine tool industry is also looking at prospective international markets in a cluster based approach for future prospects.

Skills gap is usually spoken about in the Indian manufacturing sector. How do you look at the situation? What role IMTMA is playing to bridge this gap?

There is always a big debate on who has to take the first step for skill development? Is it the industry or the academia? IMTMA however feels that both have to work together so that the required skill sets of today's workforce can get enhanced directly from academic institutions. For this the government should take steps to collaborate industry and academia and bring in a synergy to change the curriculum and impart vocational training at college level so that the foundation can become strong.

IMTMA has already taken the necessary steps since many years. The Tech Centres set up by the Association at Bengaluru, Pune and Gurugram are steps towards giving practical knowledge in various aspects of manufacturing for young engineers who graduate from various colleges. The training imparted by industry experts make them industry ready and employable. IMTMA's short-term and long-term training courses for engineers working in various manufacturing industries have upgraded the skill sets of the engineers. IMTMA signed MoUs with different institutions to offer internship programmes for students who are still on board. The programme helps them to develop industry skill sets even before they finish their studies.

Over 200 short-term and long-term training programmes were held during 2018-19 at IMTMA Technology Centres in Bengaluru, Pune and Gurugram. These efforts enabled IMTMA to record over 19,000 person-days of training and support the Indian manufacturing industry in skill development / upgradation. IMTMA Technology Centre in Bengaluru has also set up Industry 4.0 for training and demonstration.

Another initiative of IMTMA has been the "IMTMA-Institution Innovation Collaboration" (III-C). III-C has provided a platform for both industries and academia to collaborate and work together to bring out the best innovative products with the help of research talent pool available in institutions. IMTMA has been providing such platform to collaborate during exhibitions so that more industries could get an opportunity to see the research capabilities of such institutions. 

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Maruti Suzuki exports one millionth car

Maruti Suzuki India Limited has achieved the milestone of one millionth car exports from the Mundra Port in Gujarat. An Oxford Blue colour popular sedan Dzire left for Chile from Mundra. Mundra port majorly serves for exports to Latin American, Far Eastern and European markets of Maruti Suzuki.

Commenting on the achievement, Kenichi Ayukawa, Managing Director & CEO, Maruti Suzuki India Limited said, "Within a decade of commencement of exports from Mundra, we achieved the significant milestone of shipping one millionth car. At Maruti Suzuki, we have always aligned our exports strategy to keep pace with the changing market scenario. Maruti Suzuki exports are aligned with Prime Minister Narendra Modi's flagship vision of "Make in India". The efforts by Maruti Suzuki reflect India's capabilities of manufacturing cars that meet global standards of quality, safety, design and technology."

Hyundai, Cummins join forces on Hydrogen Fuel Cell Technology



Hyundai Motor Company and Cummins Inc. have announced that the two global powertrain leaders have entered into a memorandum of understanding (MOU) to jointly evaluate opportunities to develop and commercialize electric and fuel cell powertrains.

These new powertrains are expected to be developed by combining Hyundai's fuel cell systems with Cummins' electric powertrain, battery and control technologies; the initial development will be focused on the North American commercial vehicle market, including working with North American OEMs on the integration of these systems into their vehicles.

The companies will also explore ways they can work together to develop next generation fuel cell systems, and have each committed to assign a team of individuals to investigate and pursue other areas of collaboration.

"This partnership is a terrific opportunity for both companies to leverage our respective strengths and create new opportunities to grow and broaden the product portfolio we bring to our customers," said Thad Ewald, Vice President, Corporate Strategy, Cummins Inc. "We've made significant investments over the past year to accelerate our fuel cell capabilities including our acquisition of Hydrogenics and this partnership is another step forward."

India's first 21-seater monocoque smart bus launched



Force Traveller Smart Citibus was inducted into the B.E.S.T. fleet for Mumbai commuters' last mile connectivity from metro and local stations. The first lot of 5 Traveller Smart Citibuses (a part of 500 such Smart Citibuses planned by B.E.S.T) were flagged off and dedicated to the Mumbai commuters at a grand ceremony by Uddhav Thackeray - President, Shiv Sena in the presence of local dignitaries and B.E.S.T officials.

The fully air-conditioned, 21 seater (+7 standees) Force Traveller is a hi-tech solution for public city bus operations.

Traveller, on account of the monocoque construction, which is similar to an aircraft or a modern passenger car, (there is no separate heavy inefficient chassis), offers superior structural strength, ride quality, low Noise, Vibrations and Harshness (NVH) and unmatched durability. The Traveller made entirely of pressed steel panels fused together in an automated and robotic environment, is almost a tonne lighter than comparable capacity vehicles hence offers best in class power to weight ratio and fuel efficiency.

Hyundai Motor Group develops Center Side Airbag

Hyundai Motor Group (The Group) has developed a new center side airbag, further enhancing the safety of its vehicles. The airbag works to separate the space between driver and passenger. The Group will roll out the technology in upcoming vehicles.

This new, additional airbag expands into the space between driver and passenger seats to prevent head injuries of passengers in the front row. If there is no one in the front passenger seat, the airbag will protect the driver from side collision coming from the right side. The center side airbag is installed inside the driver's seat and will deploy once the impact is sensed.

The new center side airbag is expected to diminish head injuries caused by passengers colliding with each other by 80%. According to the European Automobile Manufacturers' Association's statistics, the rate of secondary damage caused by these kinds of collisions or from hitting interior materials is about 45%.

The Group has applied newly patented technology to maintain reliability but reduce the weight and size of the airbag.

Toyota invests \$391 million in San Antonio Plant

Toyota is investing \$391 million at its San Antonio truck assembly plant to better serve customers. Once complete, the plant's total investment will exceed \$3 billion.

Today's announcement comes as part of a broader commitment from Toyota to invest \$13 billion in its U.S. operations over five years through 2021. This new investment also comes with a commitment by Toyota Texas to continue funding local workforce development, a community need the company has long championed.

As part of Toyota's commitment to help San Antonio's workforce and education, Alamo Promise will receive a \$500,000 donation from Toyota Texas over a five-year period. Alamo Promise's mission is to end poverty, enhance economic and social mobility and meet workforce demands throughout the city.

Separately, Aisin AW, a supplier to Toyota Texas and other automakers, announced that it will invest \$400 million and bring 900 new jobs to a future facility in nearby Cibolo, TX.

"We've been in the U.S. for more than 60 years, creating a tremendous value chain in this country and creating an extensive footprint in the Alamo City since 2003," said Chris Reynolds, Toyota Motor North America chief administrative officer of manufacturing and corporate resources. "With 10 U.S. plants, 1,500-strong dealer network, an extensive supply chain and other operations, we directly and indirectly employ over 475,000 Americans and are committed to investing here."

Daimler to export India-built trucks by 2021/2022

Daimler India Commercial Vehicles (DICV) today showcased its readiness to transition to the new emission norms of Bharat Stage VI which will be effective from April 2020. Worldwide, Daimler has already sold over 1.4 million vehicles with EURO VI technology, an equivalent emissions standard. Additionally, DICV received certification for BS VI back in July 2019, proving they have successfully adapted their expertise with EURO VI to the Indian market.

Speaking at DICV's BS VI sneak preview, Satyakam Arya, Managing Director & CEO, Daimler India Commercial Vehicles (DICV), said: "Daimler's experience of already bringing 1.4 Million EURO VI trucks and buses on the roads means we are easily ready to transition our BharatBenz trucks and buses to BS VI by the April 2020 deadline. With this head start, we will begin exporting India-built trucks by 2021/2022."

DICV invested around Rs.500 crore to localize their EURO VI technology for India, completing two million kilometres of testing, developing new facilities and over 1000 new parts, and achieving an outstanding localization rate above 80% on its products.

LINEAR MOTION SYSTEM & BALL SCREWS

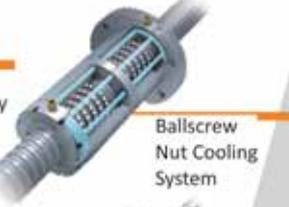




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GLOBAL CONFERENCE ON PLASTICS IN AUTOMOTIVE

A one-day conference program received tremendous response from the automotive industry.



GOLD PARTNERS



ET Polymers, the sister magazine of The Machinist recently organised the Global Conference on Plastics in Automotive in Pune. Considering the disruption happening in the automotive industry, the theme of the event was Smart, Sustainable & Sophisticated. The eminent speakers and panelists threw light on various current trends.

While delivering his Welcome Address, Ajay Durrani, Managing Director, Covestro India mentioned that plastics gained immense importance in the automotive industry. "Today, out of the components that a vehicle uses, almost 1/3rd auto components are made of plastics. And the number is growing further." The welcome address was followed by two in-

teresting presentations wherein Gaku Nakayama, Head of Mobility Business, Asia, BU PCS, Covestro Japan and Afzal Beg, Sr Manager Sales & Marketing, Matsui Technologies – India presented innovative technologies available in the plastic segment for the automotive industry. Nakayama narrated Covestro's Solutions for Mobility while Afzal Beg spoke on Paint-less, Innovative and Sustainable Solutions through RHCM.

In the panel discussion that was held on the theme of the event i.e. Smart, Sustainable & Sophisticated, industry leaders spoke about the current trends and way forward in the automotive industry. Varadan Devanathan, President, Yanfeng India Automotive Interior



Vishal Agarwal, President, Yudo Hot Runner India and Yudo Suns, Dr Rajeev Basargekar, Technical Director, APPL Industries and Ajay Durrani, Managing Director, Covestro India, along with Niranjnan Mudholkar, Editor, The Machinist & ET Polymers and Rishi Sutrave, Brand Publisher, The Machinist & ET Polymers lit the auspicious lamp

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B. Thej Kumar presents a case study on Zero Start up Rejection - Way Forward



Sameer Raina presents his thoughts on Industry Disruption and Automotive Megatrends

Systems Pvt. Ltd., Vasanth Suratkal Kamath, President, Brose India Automotive Systems Pvt. Ltd., D S Sethumadavan, Business Head - Polymer Division, Varroc Group, Vishal Agarwal, President, Yudo Hot Runner India Pvt. Ltd. and Yudo Suns Pvt. Ltd and Mathew George, General Manager-Petrochemical Sales, Indian Oil Corporation Ltd. participated in this panel discussion while it was chaired by Biranchi Mohapatra, Managing Director- India, Plastic Omnium.

Sameer Raina, Engineering Director – APA Region, Faurecia Interior Systems India Pvt Ltd. Presented on Industry Disruption and Automotive Megatrends. During his presentation he described not only the trends that are disrupting the industry but also ways

to accept and adapt them.

Yet another panel discussion was held on the topic of Materials: Making a right choice. Vineet Maheshwari, Head Engineering, Minda Sai Limited - Component Division; Subramaniam Iyer, VP Materials – Polymer, Bajaj Auto Ltd; Nikhil Kumar, AVP R&D – Polymer Division, Varroc Group; Moqtik Bawase, Dy. General Manager I Environment Research Lab (ERL), ARAI and Divakar Gokhale, Head – Business Development, Indian Subcontinent, Polycarbonates, Covestro India participates in the panel discussion. It was chaired by Sandeep Waykole, Country General Manager, Faurecia Automotive Seatings.

B. Thej Kumar, Associate Vice President- Operations, Product Development and Quality, Toyoda Gosei South India Private Limited (TGSIN) presented a case study on Zero Start up Rejection - Way Forward.

Although this conference has been conceptualised as a knowledge sharing platform, since last year, an important element was added in the conference program – Hall of Fame. This is a step to recognise and honour industry leaders whose contribution towards the automotive industry is remarkable. This year Vinod Aggarwal, Managing Director & CEO, VE Commercial Vehicles Ltd and Ramashankar Pandey, Managing Director, Hella India Lighting Ltd. were inducted into ET Polymers Automotive Hall of Fame 2019.

Various leading companies partnered with ET Polymers and contributed towards making 2019 edition of the Global Conference Plastics in Automotive a grand success, they include: Presenting Partner – Covestro India, Gold Partners – Haitian Huayuan Machinery India and APPL Industries, Silver Partners – Propel by Indian Oil and Evonik India, Exhibition Partner – Plastivision 2020, Robotics Partner – Universal Robots, Associate Partner – Yudo Hot Runner India and Hospitality Partner voestalpine High performance Metals India. 



Ajay Durrani, Managing Director, Covestro India while delivering his Welcome Address

HOW TO OPTIMIZE ALUMINIUM MACHINING IN THE AUTOMOTIVE INDUSTRY

Cutting tools play an important role in automotive manufacturing. These tools can make the job easy.



A range of thermal and mechanical properties makes for challenging machining when it comes to bi-metal materials. Existing milling cutters for this application are complex and require adjusting, resulting in compromised throughput rates.

With the automotive sector increasing its use of engine, powertrain, water pump and brake system parts manufactured from aluminium, the challenge for OEMs and their supply chain partners is to deliver more productive milling operations. Tooling selection is the key to genuine market differentiation in this segment, where the correct application of optimized milling cutters across the entire range of engine component machining operations can pay significant dividends.

There continues to be a year-on-year rise in the number of aluminium engines being produced, both for conventional and hybrid passenger cars. In fact, close to 100 million are now being manufactured every

year. These engines house parts that are often complex in shape and, after casting, demand a sequence of varied but essential milling operations.

Sandvik Coromant now has a complete offer for machining aluminium in the auto industry, from first-stage cubing, through roughing, semi-finishing and finishing. Each engineered milling tool, five in total, is designed to deliver optimized quality and cost per part. To help achieve the latter, certain tools in the range fulfil a combination of tasks, such as performing both roughing and finishing in a single operation to reduce cycle times. A case in point is the M5C90, an innovative cutter that combines roughing and semi-finishing into one tool. The M5C90 is a high-speed face-milling tool that is custom-made to eliminate lengthy set-up times at the customer facility. M5C90 works with a reduced number of teeth compared to conventional cutters, chiefly as a result of unique radial and axial insert positioning on its finishing row/inner diameter (no insert adjustment is required). This positioning ensures burr-free milling and optimum surface finish on cylinder heads, cylinder blocks, brake system parts and all aluminium components where wide cutter engagement can be achieved (not applicable on thin wall parts). To provide an example of the potential gains on offer by using the M5C90, consider an ongoing customer case trial involving a brake system body valve made from AlSi12Cu1. Featuring an outer diameter array of 10 carbide inserts and an inner diameter of four inserts (plus one wiper insert), the tool is being deployed at a spindle speed of 8000 rpm, a cutting speed of 4021 m/min (13,192 ft/min) and a feed of 0.25 mm/tooth (0.009 in/tooth). In addition, axial depth of cut is 2 mm (0.078 in) with a radial depth of cut of 140 mm (5.51 in), producing a metal removal rate of 5600 cm³/min (342 in³/min). Although total tool life is yet to be determined, the same tool is still within the machine after 18 months of service.

For those requiring a cutter that can also finish thin-walled aluminium parts such as gearbox housings and casings, Sandvik Coromant has another cutter that

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MAC



is equally effective, the M5F90. The M5F90 is another one-shot roughing and finishing tool. Dedicated to the machining of thin wall aluminium parts and spot-facing operations, the cutter body (25-80 mm, 0.98-3.15 inch in diameter) houses brazed PCD tips. Each tip contains both a roughing edge and a finishing edge. The roughing area works as a conventional milling tool, with all cutting edges on the same diameter and height, while the finishing area consists of radial and axial stepped cutting edges. This concept enables a close pitch to deliver burr-free machining and outstanding surface finish.



The potential to reduce cycle times and cost per part, while at the same time improving tool life and quality, is very real.

Impressive time savings are possible, as seen in a customer case trial that involved the face milling of an aluminium (high Si content) cylinder head. Here, the use of M5F90 against a special PCD cutter manufactured by a competitor, not only saw a 150% cycle time saving, but eliminated burr generation. Cutting data included: 15,915 rpm spindle speed; 2000 m/min (6562 ft/min) cutting speed; a feed rate of 0.16 mm/tooth (0.006 in/tooth); & 1.5 mm (0.06 inch) depth of cut.

In a further M5F90 example, cycle time reductions of 44 per cent were achieved on an aluminium chain case in comparison with using a competitor's 63 mm (2.48 inch) diameter indexable cutter featuring six PCD inserts. What's more, the solution eliminated a previously required brush deburring operation.

Another new engineered tool is the M610, which has been developed to mill the deck face/top of engine cylinder blocks with bi-metal interfaces, typically aluminium and grey cast iron (CGI).

A range of thermal and mechanical properties makes for challenging machining when it comes to bi-metal materials. Existing milling cutters for this ap-

plication are complex and require adjusting, resulting in compromised throughput rates. In addition, such tools often cause chipping on the CGI portions of the component.

In contrast, M610 requires no set up and no adjustment, & results in the potential to deploy high feed rates without chipping, burring or scratching of parts. This capability is important as surface imperfections have the potential to produce leakage between the cylinder block and head, which in turn compromises power and performance. Some global automotive OEMs are already benefitting from the adoption of M610.

To reference one particular customer, enormous competitive gain has been achieved when finishing the combustion face on bi-metal engine blocks. Pitched against a competitor's adjustable cutter with cartridges, the M610 achieved a tool life improvement of 833%, completing more than 4000 parts, in comparison with the competitor cutter's 480. Moreover, the M610 performed at 10 times the speed. Cutting data for the 15-insert M610 included: 3000 m/min (9843 ft/min) cutting speed; a feed speed of 5720 mm/min (225 in/min); a spindle speed of 3820 rpm; a feed rate of 0.15 mm/tooth (0.006 in/tooth); and a depth of cut on aluminium of 0.5 mm (0.02 inch) & on cast iron of 0.05 mm (0.002 inch).

Other tools in the family include the M5Q90 tangential roughing cutter, which performs first-staging cubing (first machining of faces after casting) in a single operation without burring. The tool is fitted with PCD tangential inserts that provide a smooth and stable cutting action to reduce power consumption and eliminate vibration.

Aluminium cylinder heads and blocks are among the components to benefit from the M5Q90. By way of example, the cubing operation on a cast cylinder head would typically involve machining the camshaft face, inlet/outlet face and combustion face. In a customer case study, the rough face milling of cylinder heads cast from AS-9 aluminium alloy on a horizontal machining centre, produced highly impressive tool life results. At 3000 m/min (9843 in/min) cutting speed, feed per tooth of 0.2 mm (0.008 in) and 2.0 mm (0.079 in) axial depth of cut (fully engaged to 40 mm (1.57 in), more than 10,000 components were completed.

A further tool is the M5R90 for second stage roughing/semi-finishing. This standard cutter works with adjustable cartridges and supports a depth of cut of up to 8 mm (0.315 inch) with a 0.4 or 0.8 mm (0.016 or 0.031 inch) radius depending on the cartridge used. Easy-to-adjust cartridges are of benefit in many automotive applications, as could be seen in a recent customer trial involving the face milling of an engine cover. Cast from MRHB Si12 aluminium alloy,

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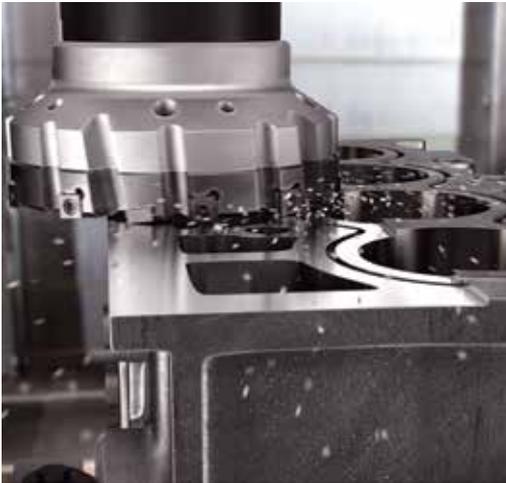
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the M5R90 performed extremely favourably against the incumbent competitor cutter. Based on identical cutting data, the M5R90 extended tool life from 8000 to 10,000 workpieces. Moreover, the competitor cutter needed to be adjusted after every 1000 parts due to cartridge movement that compromised surface finish. In contrast, the M5R90 produced 8000 parts before any adjustment to the cartridge was required. Also included in the family is the M5B90 super-finishing face mill with its unique axial and radial positioning of inserts. This configuration, together with the wiper insert, ensures burr-free cutting with excellent surface quality, as a manufacturer of cylinder heads for passenger cars

recently discovered. The company was experiencing process instability and issues with burrs, while another problem was unpredictable insert life, which depended on cartridge adjustments that differed from set-up to set-up. Switching to the M5B90 cutter provided a smooth finishing operation with predictable wear and no burr. The tool produces only very thin chips, which are easily removed during the cutting process to avoid any damage to the component face. In addition, changing to M5B90 extended tool life from 30,000 to 45,000 parts on average.

CoroDrill® and CoroTap® family drilling and tapping tools can also be offered to customers as part of the same family of solutions for machining aluminium automotive components, as can the standard CoroMill® Century 590 face mill finishing cutter. In all cases, the potential to reduce cycle times and cost per part, while at the same time improving tool life and quality, is very real, as can be seen by the customer case examples described. In the automotive industry, where high-volume production is prevalent, even a small saving in cycle time can equate to significant financial returns. With this thought in mind, any technology that can demonstrate the ability to deliver larger gains, is difficult to ignore. 

Source: Sandvik Coromant

MAHINDRA, FORD ANNOUNCE A JOINT VENTURE

Mahindra & Mahindra Limited and Ford Motor Company have signed a definitive agreement to create a joint venture that will develop, market and distribute Ford brand vehicles in India and Ford brand and Mahindra brand vehicles in high-growth emerging markets around the world.

Mahindra and Ford will form a joint venture, with Mahindra owning a 51 percent controlling stake and Ford owning a 49 percent stake. Ford will transfer its India operations to the JV, including its personnel and assembly plants in Chennai and Sanand. Ford will retain the Ford engine plant operations in Sanand as well as the Global Business Services unit, Ford Credit and Ford Smart Mobility.

The JV is the next step in the strategic alliance forged between Ford and Mahindra in September 2017 and is expected to be operational by mid-2020, subject to regulatory approvals. The joint venture will be operationally managed by Mahindra, and its governance will be equally composed of representatives of Mahindra and Ford. The JV will be responsible for growing the Ford brand in India and exporting its products to Ford entities globally. Ford

will continue to own the Ford brand, and its branded vehicles will be distributed through the current Ford India dealer network. Mahindra will continue to own the Mahindra brand and operate its own independent dealer network in India.

“Mahindra & Ford coming together is a testament to the long history of cooperation and mutual respect between the two companies. Our combined strengths – Mahindra’s expertise in value-focused engineering and its successful operating model, and Ford’s technical expertise, global reach and access to future technology – are a potent recipe for success. At its core, the partnership will be driven by the shared values of both companies, which are focused on caring for our customers, associates and our communities,” said Anand Mahindra, Chairman, Mahindra Group.

“Ford & Mahindra have a long history of working together, and we are proud to partner with them to grow the brand in India. We remain deeply committed to our employees, dealers and suppliers, & this new era of collaboration will allow us to deliver more vehicles to consumers in this important market,” said Bill Ford, executive chairman, Ford Motor Company.

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DEALING WITH DISRUPTIONS

A highlight of the ET Polymers Global Conference on Plastics in Automotive 2019 was the keynote panel discussion which revolved around the theme of the conference program i.e. Smart Sustainable & Sophisticated. During this panel discussion, industry veterans including Varadan Devanathan, President, Yanfeng India Automotive Interior Systems Pvt. Ltd., Vasanth Suratkal Kamath, President, Brose India Automotive Systems Pvt. Ltd., D S Sethumadavan, Business Head - Polymer Division, Varroc Group, Vishal Agarwal, President, Yudo Hot Runner India Pvt. Ltd. and Yudo Suns Pvt. Ltd. and Mathew George, GM-Petrochemical Sales, Indian Oil Corporation Ltd. shared their valuable insights. The discussion was moderated by Biranchi Mohapatra, MD, India, Plastic Omnium. During the conversation, participants agreed that the automotive industry is going through a challenging phase due to multiple disruptions. Implementation of BS VI, emergence of electric vehicles, etc. are disrupting the



industry like never before. The panel also threw light on IoT enables & Connected Cars. They said that such vehicles is still a distant future. However, hybrid and EVs will gain popularity in the country in the years to come. As a result, the automotive industry should focus on the factors such as extending battery life, creating infrastructure like charging stations, etc.

One of the important points that the panel discussed was the way forward towards becoming environmentally-friendly industry. All the panellists agreed that the industry needs to have the right approach towards eco-friendly vehicles. EVs is not the only solution, it is equally important to have renewable energy sources.

AUTOMOTIVE HALL OF FAME 2019

Recognising contributions of industry leaders



The prestigious ET Polymers Automotive Hall of Fame was bestowed upon to two leaders in the industry recently during Global Conference on Plastics in Automotive 2019. Vinod Aggarwal, Managing Director & CEO, VE Commercial Vehicles Ltd and Ramashankar Pandey, Managing

Director, Hella India Lighting Ltd. were inducted into ET Polymers Automotive Hall of Fame.

While accepting the recognition, Aggarwal said, "Thank you very much for honouring me. It is a pleasure to be recognised on a platform such as this." He further added, "Plastics is a magical material that has been transforming the automotive industry. So far, the material manufacturers and component makers have been focusing on the passenger vehicles to a large extent. However now there is immense opportunity for them to make commercial vehicles lighter with the use of plastics."

In his acceptance speech, Ramashankar Pandey mentions, "Thank you very much for honouring me. It is a pleasure to be here." He further emphasised on the safety aspect in the automotive industry. Speaking on it, he said, "Safety is of paramount important whether while manufacturing a car or driving it. One should not neglect it." 

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Elgi opens its new headquarters in Europe at Brussels in Belgium

Elgi Equipments, one of the world's leading air-compressor manufacturers, announced the opening of its new European headquarters in Belgium. Situated at Drève Richelle 167, 1410 Waterloo, (Brussels - the nerve center of Europe), and spread over 400+ sq meters, the workplace will house over 20 people and feature training rooms and offices designed to build collaboration and foster innovation.



focused on always being the customer's choice. With this goal in view, we've concentrated on developing world class products with the best Life Cycle Cost (LCC). We've guaranteed the best in industry uptime. We've reaffirmed our commitment to reliability by providing customers with robust warranty and we've driven cost leadership through technology and innovation. All of this,

Speaking at the inauguration Dr. Jairam Varadaraj, CEO, Elgi Equipments said "We're proud of what we've built at Elgi. Over the years, our definition of Always Better has ensured we are

has resulted in us witnessing significant success in the USA, the world's second largest air compressor market, in a short span of 5 years. Europe is the third largest market worldwide and presents us with a huge opportunity. We're excited. And while we celebrate our successes, we will toast to the future."

BEML opens new test facility



BEML a Miniratna GoI Undertaking under the Ministry of Defence set up Bogie Traction Motor Run test facility for Metro at its Metro manufacturing unit at Bangalore. At a function held at BEML Bangalore Complex, the facility was inaugurated by Ajay Seth, IAS., MD Bangalore Metro Rail Corporation (BMRCL) in the presence of Deepak Kumar Hota, CMD BEML and other senior executives of BEML & BMRCL.

The indigenously developed facility is one of its kind in India, will help in improving metro train ride quality and increases the reliability of coaches. This will run on electrical drive type for checking the drive from Traction Motors to Wheels.

It may be recalled that BEML had supplied 150 metro cars to BMRCL which are running as 3 car train sets.

In addition to above, against a contract of 192 cars, BEML so far supplied 105 cars for conversion into 6 cars train sets and balance are being delivered progressively by June 2020 which is helping in decongestion of Bangalore traffic.

BEML is currently supplying world class metro cars to Kolkata and Mumbai in addition to cars already supplied to Bangalore, Delhi and Jaipur. BEML is the leading manufacturer with 48% market share in Indian Metro segment.

Airbus opens new A320 structure assembly line in Hamburg

Airbus has opened its automated fuselage structure assembly line for A320 Family aircraft in Hamburg, displaying an evolution in Airbus' industrial production system. With a special focus on manufacturing longer sections for the A321LR, the new facility features 20 robots, a new logistics concept, automated positioning by laser measurement and a digital data acquisition system. These will further support Airbus' drive to improve both quality & efficiency while bringing an enhanced level of digitalisation to its industrial production system.



"By embracing some of the latest technologies & processes, Airbus has begun its journey to set new standards in A320 Family production. This new fuselage structure assembly line is an essential enabler for the A320 Family ramp-up. Increasing level of automation & robotics enables faster, more efficient manufacturing while keeping our prime focus on quality," said Michael Schoellhorn, Airbus COO. "

For the initial section assembly, Airbus is using a modular, lightweight automated system, called Flextrack, with eight robots drilling & counter-sinking 1,100 to 2,400 holes per longitudinal joint. In the next production step, 12 robots, each operating on seven axes, combine the centre and aft fuselage sections with the tail to form one major component, drilling, counter-sinking, sealing and inserting 3,000 rivets per orbital joint.

BASF acquires majority share in a digital platform

On September 30, BASF acquired a majority share of the internet platform UBench with offices in Turnhout and Geel, Belgium. Both companies have agreed not to disclose financial details of the transaction. The transaction includes UBench International NV, CarRoll BVBA and DLight BVBA. Regulatory approvals are not required. UBench and its more than 30 employees continuously advance the inhouse developed internet platform and manage the service portfolio for various customers in the automotive aftermarket, such as leasing companies, insurance companies, car manufacturers and companies with large fleets. "The transaction reflects BASF's strategic and longterm commitment to grow in the refinish business beyond premium paint and to enhance customer experience," said Dirk Bremm, President of BASF's Coatings division.

"UBench is a collaborative digital platform business that increases our portfolio by providing service solutions," said Katja Scharpwinkel, Senior Vice President BASF Automotive Refinish Coatings Solutions Europe. "By connecting all players in the automotive aftermarket industry, we strengthen our position in the fast growing automotive service segment."

UBench will continue its current activities as a standalone busi-



From left: Dirk Tack (Site Manager BASF Waterloo), Marc Lens, Peter Verbraeken and Eric Proost (all UBench International), Christina Ewringmann (Regional Key Account Management & Platform Business Development, BASF), Oliver Birk (Director Global Key Account Management & Director Platform Management, BASF) and Katja Scharpwinkel (Senior VP BASF Automotive Refinish Coatings Solutions Europe). © BASF Coatings

ness under the umbrella of the newly established UBench BV.

Peter Verbraeken, Founder and CEO of UBench, will hold a minority share supporting consistency and future strategic development of the business.

Rolls-Royce signs an agreement with Westinghouse

Rolls-Royce has signed an agreement to sell its North American civil nuclear services businesses to Westinghouse Electric Company. This follows a review of options for the businesses and continues its drive to simplify the Group and focus on meeting the vital power needs of its customers.

The sale comprises civil nuclear services businesses in the US and Canada along with sites at Mondragon, France, and Gateshead, UK, which are currently part of its Power Systems business unit.

It does not include the instrumentation and controls business based in Grenoble, France, which remains under review. It also does not include its UK nuclear new build operations or small modular reactor activities, which will continue contributing to the provision of low carbon power for the UK.

Warren East, Rolls-Royce Chief Executive, said: "Its North America services business offers great opportunities for Westinghouse as a leading player in the nuclear energy industry. We believe this transaction represents the best outcome for this part of our civil nuclear operations and our people."

In 2018, the businesses subject to the agreement reported revenues of USD 70 million with ~500 employees, which were consolidated within the results of its Power Systems business unit.

Toyota and Subaru strengthen partnership

Toyota Motor Corporation (Toyota) and Subaru Corporation (Subaru) have agreed on a new business and capital alliance with the aim of further developing and strengthening their long-term partnership.

Ever since concluding an agreement on business collaboration in 2005, partnership between Toyota and Subaru has included contract production by Subaru of Toyota vehicles and supply by Toyota of vehicles to Subaru, as well as joint development of the rear-wheel-drive Toyota 86 and Subaru BRZ sports car models.

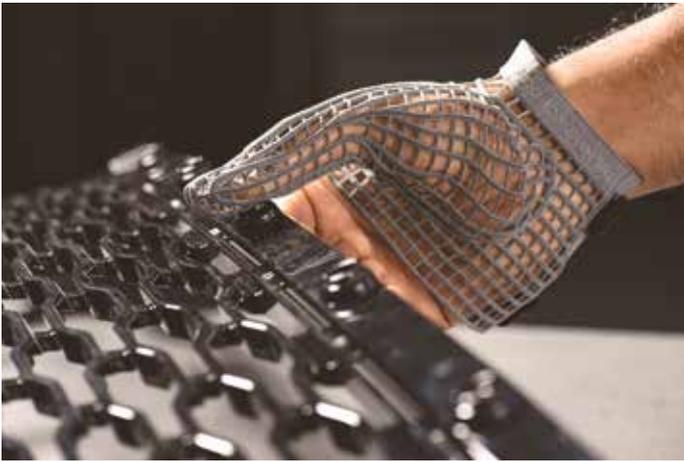
Also, with vast changes enveloping the automotive industry, which is being called on to respond to the new domains of CASE (connected, autonomous/automated, shared, and electric), Toyota and Subaru disclosed in June this year that they have agreed to jointly develop a platform dedicated to battery electric vehicles (BEVs) and to jointly develop a BEV model, both of which will employ Subaru's AWD technologies and Toyota's vehicle electrification technologies.

Toyota and Subaru aim to pursue driving enjoyment in the CASE era and to make ever-better cars beyond what either company has been able to achieve thus far. Furthermore, to deepen their relationship and to strengthen their ties toward advancing to the next stage while respecting the identity of each other's brand, the two companies have agreed that Toyota will increase its equity stake in Subaru and that Subaru will acquire shares in Toyota.

Commenting on the agreement, Toyota President Akio Toyoda said: "During this once-in-a-century period of profound transformation, even if CASE changes how cars will be, driving enjoyment will remain an inherent part of automobiles and is something that I think we must continue to strongly preserve."

IN SAFE HANDS

Engineers at JLR's Gaydon site have used advanced manufacturing expertise to design and 3D print a glove which reduces muscle fatigue and is also be flexible and comfortable enough to wear during an eight-hits shift.



The 3D glove is designed for people working on the production line, for example those required to fit clips or fasteners into the chassis during assembly of Jaguar and Land Rover's luxury vehicles.

Engineers from Jaguar Land Rover are working on the next generation of protective workplace clothing – a lightweight 3D-printed glove which could help better protect employees from the threat of a musculoskeletal disorder.

The 3D glove is designed for people working on the production line, for example those required to fit clips or fasteners into the chassis during assembly of Jaguar and Land Rover's luxury vehicles.

Musculoskeletal disorders, which include more than 100 different types of conditions, make up around 30 percent of all workplace injuries that result in time off and account for a third of the money paid in compensation to employees. Musculoskeletal disorders affect an estimated 10 percent of the global population, rising to as much as 40 percent in certain industries.

Engineers at Jaguar Land Rover's Gaydon site – home to one of the largest 3D printing facilities in the UK – saw an opportunity to use the company's advanced manufacturing expertise to design and 3D print

a lattice-style structure which would provide support to reduce muscle fatigue, but also be flexible and comfortable enough to wear during an eight-hits shift. Using 3D computer-aided design (CAD) software, the team modelled designs in different densities using a variety of materials for testing.

Following feedback from trials, the team is now working on a second-generation prototype. It will include a foam pad made using impact additive D30 – a polymer material which absorbs impacts when placed under pressure. This will make the glove suitable for those who fit parts, such as door casings, using the palm of the hand.

In the short term the gloves will support workers across Jaguar Land Rover's facilities, helping to protect against musculoskeletal disorders. These form part of a wider future plan to deploy a range of technologies to assist those with muscle weakness or patients who suffer from physical or neurological disorders – helping employees return to work.

Chris Noble, Additive Manufacturing Strategic Engineer for Jaguar Land Rover, said: "The health and wellbeing of its workforce remains its priority across all factories and facilities.

"Technologies like the 3D-printed glove allow us to use the world-leading expertise and equipment we have in-house to protect the hands of its makers, developing equipment that will make Jaguar Land Rover a great place to work, now and in the future."

The Jaguar Land Rover Additive Manufacturing Centre produces over 80,000 parts a year for a variety of applications, including functional prototyping, design mock-ups and manufacturing assembly aids and fixtures. Jaguar Land Rover is also able to 3D print parts for production cars with the Jaguar XE SV Project 8 one of the first vehicles to use them.

The programme forms part of Jaguar Land Rover's Destination Zero vision; an ambition to make societies safer and healthier, and the environment cleaner. Delivered through relentless innovation, the company's focus is on achieving a future of zero emissions, zero accidents and zero congestion – across its facilities, and through its products and services. 

AUTOMATED BENDING, HIGH-SPEED LASER CUTTING



LV D showcases Industry 4.0-ready products designed to help sheet metalworking companies advance their business, including the Dyna-Cell robotic bending cell, ToolCell automated tool changing press brake, ultra-high-speed Electra 10kW fiber laser cutting machine, and CADMAN® software at Blechexpo, Hall 1 - Stand 1713.

Dyna-Cell features the high-speed Dyna-Press Pro electric press brake and a Kuka robot. Dyna-Press Pro

is now available with LVD's exclusive Easy-Form® Laser adaptive bending system to ensure bending accuracy. The robot is equipped with LVD's patent-pending universal gripper able to bend on three sides of a part without re-gripping. Because one gripper fits all applications, production is continuous and uninterrupted. The compact Dyna-Cell automates bending of small- to medium-sized parts in varying batch sizes at speeds up to 25mm per second. It features an intelligent programming wizard for fast, easy programming of the bending cell. Dyna-Cell follows the 10-10 rule: 10 minutes for CAM generation of the bending and robot program; 10 minutes for set-up and first part generation. Dyna-Cell also allows for unmanned or manned operation, offering a flexible bending solution.

ToolCell automated tool changing press brake maximizes bending productivity through an integrated storage of tooling, housed within the machine. The patented Easy-Form® Laser adaptive bending system provides in-process angle monitoring, which guarantees the desired angle from the first bending operation.

Electra FL with high-power 10kW fiber laser is an ultra-high-speed laser cutting machine that cuts ferrous and non-ferrous metals as fast as the thermal process allows. The machine gantry features a linear drive motor to ensure extremely high dynamics and 2G acceleration while cutting.

CADMAN® makes the virtual factory possible, enabling a constant flow of data between machines and software.

Source: LVD Company nv

MOVING TOWARDS BATTERY TECHNOLOGY

As the industry is moving towards Electric vehicles, need of precise and controlled tools for assembly and reassembly of parts are growing. Chicago Pneumatic studied the usage of power tools while changing tires and two key challenges emerged. Firstly, when operator needs to do an initial approach to set up the bolt, impact wrench will be used. However power on the traditional Impact Wrench cannot be controlled. Secondly over tightening and under tightening of bolts cannot be identified. Chicago Pneumatic, shutoff type Cordless impact wrench is an excellent solution for above challenges.

"½" Cordless Impact Wrench is



WITH A CHOICE OF SLOW MODE AND FAST MODE, CORDLESS IMPACT WRENCH OFFERS FULL CONTROL TO OPERATOR IN TIGHTENING OPERATIONS AND PROACTIVELY GUIDES CRITICAL PARAMETERS SUCH AS TORQUE TO ENSURE THAT EVERYTHING IS DONE PROPERLY
PRIYA RAJESH, PRODUCT MARKETING MANAGER, CHICAGO PNEUMATIC TOOLS

a unique tool in its class with two shutoff positions. With a choice of slow mode and fast mode, cordless impact wrench offers full control to operator in tightening operations and proactively guides critical parameters such as torque to ensure that everything is

done properly. We are glad to offer changing vehicle service industry a rugged, powerful and durable solution with improved precision and control", says Priya Rajesh Product Marketing Manager, Chicago Pneumatic Tools.

Source: Chicago Pneumatic Tools India

PARTING 4 PRODUCTIVITY

Always at the cutting edge of developments in the field of cutting tools, ISCAR introduces a new system for parting and grooving operations.



WITH INDUSTRY 4.0 DEMANDS AND STANDARDS FUELING INDUSTRY DEVELOPMENT AT EXTRAORDINARY RATES, ISCAR HAS INTRODUCED NEW PARTING AND GROOVING TECHNOLOGIES CAPABLE OF INTEGRATING SEAMLESSLY WITH THE NEW WAVE OF MACHINING CENTERS THAT WORK WITH INCREDIBLY HIGH FEEDS.

Parting and grooving are essential aspects of the turning process and the metalworking industry faces a constant challenge to integrate methods that will increase efficiency and decrease downtime for these popular operations.

ISCAR fully understands the importance of parting and grooving operations in the turning process and that multiple factors need to be considered for every application, including machine tool selection, the type of material being parted/grooved, required depth of cut, and feed and speed rates. The company has responded to these complex needs by developing a comprehensive range of highly effective parting and grooving solutions that include an extensive choice of insert geometries, chip breakers, and carbide grades - and the range continues to expand.

With Industry 4.0 demands and standards fueling industry development at extraordinary rates, ISCAR has introduced new parting and grooving

technologies capable of integrating seamlessly with the new wave of machining centers that work with incredibly high feeds. MULTI-F-GRIP has been designed to answer these needs and to achieve high productivity and lower costs.

A revolutionary parting system designed for increased productivity, MULTI-F-GRIP comprises a robust tool block carrying square blades that feature four pockets, with a unique parting concept capable of parting off up to 120mm bar diameter to optimize performance.

MULTI-F-GRIP is simple to mount and operate on all machine types, including multi-task and machining centers on X-AXIS, without any need for

special adjustment. The system enables the mounting of both TANG-F-GRIP and DO-GRIP blades on the same blocks.

The square blades possess a support system that provides totally vibration-free grooving and parting. MULTI-F-GRIP also saves on setup time as, in cases of pocket damage, the block's configuration allows a blade to be rotated to a new pocket without setup.

MULTI-F-GRIP is intended for high feed parting. It extends insert life, improves surface finish and part straightness, and features high stability - especially when parting large diameters. The new patented blades reduce cutting time and also enable significant material savings - for instance, a 120mm bar can be cut with a 3mm blade with HF (high feed) inserts at a feed rate of up to 0.4 mm/rev (.0157ipr).

The HF tangential single-ended insert was developed to enable highly efficient parting at very high feed rates, by use of a unique chipformer technology. The insert features a new insert chipformer to allow unobstructed chip flow, which increases insert and blade tool life and leads to very high productivity gains.

All TANG-GRIP inserts can be integrated into the MULTI-





A SECURE CLAMPING METHOD USING A TANGENTIALLY ORIENTATED POCKET FACILITATES POCKET LIFE THAT IS THREE TIMES LONGER THAN THAT OF ANY OTHER CONVENTIONAL SELF-GRIP SYSTEM. THE ROBUST CLAMPING METHOD ENABLES MACHINING AT HIGH FEED RATES AND PROVIDES EXCELLENT STRAIGHTNESS AND SURFACE FINISH CHARACTERISTICS, WHILE THE FLAT TOP CONFIGURATION PREVENTS CHIP OBSTRUCTIONS UNDER ALL POSSIBLE MACHINING CONDITIONS.



F-GRIP system, which is also compatible with DO-GRIP DGN double-sided twisted geometry parting inserts, to provide an extensive choice of parting widths for all application ranges. ISCAR offers a wide variety of chipformers and advanced grades to ensure unbeatable performance and extended tool life.

A secure clamping method using a tangentially orientated pocket facilitates pocket life that is three times longer than that of any other conventional self-grip system. The robust clamping method enables machining at high feed rates and provides excellent straightness and surface finish characteristics, while

the flat top configuration prevents chip obstructions under all possible machining conditions.

The JETCUT system incorporates ingeniously designed through coolant channels to deliver coolant close to the cutting edge, which improves chip formation and slashes flank and cratering rates.

When machining materials such as stainless steel or high temperature alloys, the temperature near the cutting edge area becomes extremely high. In addition, these material types tend to adhere to the tools cutting edge, causing built-up edge. These problematic phenomena can be moderated by targeting high pressure coolant directly to the cutting zone.

ISCAR maintains its unrelenting progress as a result of the company's continuous development of innovative, high-quality products, based on the talented work of the company's R&D Department and prompted by the evolving needs of global industry. This desire to provide customers with the very latest, most efficient metal cutting technology is reflected in the introduction of MULTI-F-GRIP solutions to ISCAR's comprehensive GRIP range of parting and grooving tools.

Source: ISCAR

JLR UNVEILS AUTOMOTIVE CREATION AND DEVELOPMENT CENTRE

Jaguar Land Rover has unveiled new facilities at its Gaydon site in Warwickshire, creating one of the UK's most sustainable non-domestic buildings & the country's largest automotive creation & development centre.

The Gaydon site forms part of Jaguar Land Rover's Destination Zero mission; an ambition to make societies safer and healthier, and the environment cleaner. Delivered through relentless innovation, the company's focus is on achieving a future of zero emissions, zero accidents and zero



congestion – across its facilities, and through its products and services.

Gaydon is home to almost 13,000 highly-skilled engineers and designers who are developing the current and next generation Jaguar and Land Rover vehicles. The industry-leading centre is also creating

future autonomous, connected, electrified and shared mobility technologies that will enable Jaguar Land Rover's long-term, sustainable growth.

Source: Jaguar Land Rover

A LUBRICATION-FREE WORLD FOR HEAVY MACHINES

In a test, the new high-load bearing withstands up to 130 MPa

In construction machines, agricultural machines, utility vehicles and offshore installations, plain bearings often have to cope with extreme conditions such as heavy loads. igus has therefore further developed its lubrication-free two-component bearing iglidur Q2E. The material iglidur Q2 ensures a tested high degree of wear-resistance, and a hard polymer shell protects the heavy-duty bearing.

Dirt, impacts and high edge loads. Bearings in construction equipment, agricultural machines and offshore installations often have a hard time and have to cope with extreme conditions. Durable materials and dirt-resistant components are therefore called for. igus has now upgraded its iglidur Q2E heavy-duty bearing for exactly such scenarios of use. igus is expanding its range of bearings for heavy-duty applications and closes the gap between existing bearings and solutions

THE BEARING CONSISTS OF HIGH-PERFORMANCE PLASTICS AND IS THEREFORE COMPLETELY LUBRICATION AND CORROSION-FREE. THE ABSENCE OF LUBRICATION ALLOWS MAINTENANCE-FREE OPERATION OF THE BEARING POINTS AND PREVENTS MACHINE FAILURES DUE TO LACK OF LUBRICATION.

made of metal and composites. The bearing consists of high-performance plastics and is therefore completely lubrication and corrosion-free. The absence of lubrication allows maintenance-free operation of the bearing points and prevents machine failures due to lack of lubrication. Expensive central lubrication systems are no longer necessary. Dirt and impurities can no longer adhere to the bearing points, and this minimises wear. In addition,



less grease and oil escapes into the environment, a result of which the annual consumption of over 35 million metric tons of lubricant, as measured by RWTH Aachen University, is reduced. Another advantage: the injection-moulding method used to manufacture the plain bearings is especially cost-efficient.

The combination is the secret

Two materials in an encapsulated design ensure that the bearing can cope even with the most extreme edge loads. This is because the iglidur Q2E has a hard polymer shell and a tribologically optimised core composed of iglidur Q2 as the material. When used for a plain

bearing with a diameter of 20 millimetres, this material is also very dimensionally stable and wear-resistant even under high loads of up to 7 metric tons. Functioning as a protective sheath, the shell makes the bearing very sturdy and ensures that it has a longer service life. igus has proven this in its own in-house test laboratory. In the swivel test, the material withstood a radial load of 130 MPa. iglidur Q2E is initially available for shaft diameters of 20, 25, 30 and 40mm.

For more info, contact:
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DRDO CONDUCTS FIVE SUCCESSFUL TRIALS OF ASTRA

Defence Research and Development Organisation (DRDO) successfully flight tested the Beyond Visual Range Air-to-Air Missile (BVRAAM) Astra from Su-30 MKI platform off the coast of Chandipur, Odisha. The trials were held from 16 to 19th September 2019. The trials were conducted by Indian Air Force (IAF) against Jet Banshee target aircraft simulating all possible threat scenarios. The five trials conducted during this period tested missiles in different configurations. During the campaign, three missiles were launched in combat configuration with warhead & manoeuvring targets were neutralized to establish the end game capability of the missile. The

trial campaign also included a direct hit of the target by the telemetered missile at maximum range. All the subsystems performed accurately meeting all the mission parameters & objectives. Astra BVRAAM has range of more than 100 km with modern guidance & navigation techniques. The missile has midcourse guidance & RF seeker based terminal guidance to achieve target destruction with pin point accuracy. The effort for building a state-of-the-art BVRAAM by DRDO, together with IAF has completed the user trial phase of the weapon system successfully. Hindustan Aeronautics Limited (HAL) has played a role in modifying the aircraft for weapon integration.

SMART CLAMPING AND GRIPPING



Under the motto “Empowering Machines & Operators,” SCHUNK presented the smart future of gripping systems and clamping devices in modern production at EMO 2019. One thing is certain: The purely mechanical solutions of today will be smart tomorrow. Among the pioneers is the sensory toolholder iTENDO, the world’s first precision toolholder for real-time process monitoring and control for machine tools, which was honored with the MM award at the EMO. It can be used to detect vibrations, chatter marks, and tool failure, and adapt processes immediately and fully automatically. The sensory toolholder allows seamless documentation of process stability, real-time compatible control of RPM and feed rate, and unmanned limit value monitoring and tool breakage detection. SCHUNK demonstrated how this can be successful using practice-based pilot applications that provided some idea of the wide range of fields, in which the smart hydraulic expansion toolholder

can be used. Applications range from classical milling applications and micro-cutting to deburring with brushes. Particularly in case of processes with severe fluctuations due to material or ambient conditions, in production of premium parts and processes with a high degree of tool wear, the iTENDO really comes into its own.

Built-in intelligence

Further highlights were the sensory quick-change pallet module VERO-S NSE-S3, the smart long-stroke gripper EGL, presented for the first time with a plug-&-work-compatible interface for lightweight robots by Universal Robots, and automatable run-out and conical run-out compensation for high-precision workpiece clamping with tolerances of a few micrometers. In addition, SCHUNK presented a wide range of solutions for flexible, automated machine loading: Lean automation solutions, palletizing systems for the

smallest batch sizes, but also high-performance Co-act solutions for human-robot collaboration. Chief Executive Officer Henrik A. Schunk is convinced that automated solutions in particular, will be of increasing importance in the years to come: “The boom in lightweight robotics, the growing demand in the area of human-robot collaboration, and the wave of automation among medium-sized businesses show that users are now focusing on automation of machine tools. At the same time, there is a clear demand for simplification. Gripping systems and clamping devices need to be commissioned rapidly and intuitively; and adapted simply and quickly to various part scopes.” With its extensive, highly compatible modular programs, SCHUNK is making an important contribution to ensuring that this becomes a success, adds the entrepreneur.

For more info: schunk.com

SAVING UP TO 40 PER CENT IN MACHINING TIMES

At EMO Hannover 2019 VARGUS Ltd. launched the addition of a new Thread Milling solid carbide tool, the TM Solid Multiflute, with increased number of flutes for faster machining.

The Multiflute Helicool tools represent the newest addition to the extensive Vardex line of high-quality solid carbide thread milling tools. Multiflute tools are designed with up to seven flutes, thus enabling to work in faster cutting conditions. For better chip evacuation, machining with radial multiple passes is required.

Multiflute tools are offered in full profile threading standards - ISO Metric and American UN - with coolant thru & are suitable for a wide range of materials like steel, stainless steel, cast iron, non-ferrous metals, etc.

Tool Features

- Thread Lengths: 2xDo and 3xDo (Thread Diameter)
- Thread Standards: ISO Metric (mm shank): From M3x0.5 up to M16x2.0



American UN (inch shank):
From No.10-32 up to 1x8”

- Grade: VTH grade specially designed for heavy-duty thread milling. TiCN for high resistance to wear

Multiple Passes

The VARGUS GENius™

software for tool selection & cutting data fully supports new TM Solid Multiflute Tools, & allows to program thread milling applications with multiple passes. It automatically generates the recommended number of passes required, based on the machining data that is entered. The GENius software allows user to change the number of passes manually, & to modify depth of the final pass. This new patent pending feature is recommended for applications that require multiple passes, like long threads, difficult to machine applications, & hard materials.

Source: *Vargus Ltd.*



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Cooling Systems Solutions

Our Products



Evaporative Air Cooler



Exhaust Fans



Compact Air Cooler



HVLS Fans

Key Strengths and Advantages of Ecoair Cooling Systems

- ▲ Comfort cooling up to 20°C with high airflow
- ▲ Fresh, Filtered, Cool & Oxygen Rich Air
- ▲ Energy saving up to 80%
- ▲ Environmental Friendly
- ▲ Low Capex
- ▲ Dust protection Nylon Mesh
- ▲ Innovative Design & Engineering
- ▲ Humidity controller/ Temperature controller /
- ▲ Auto Draining & Cleaning/ Remote Controlled with 16 speeds
- ▲ Open Space Cooling
- ▲ Factory Built Modular Construction for Long Life


Ecoair Cooling Systems Pvt. Ltd



Survey No. 279/ 1&2 Rasoni Industrial Park Hinjewadi

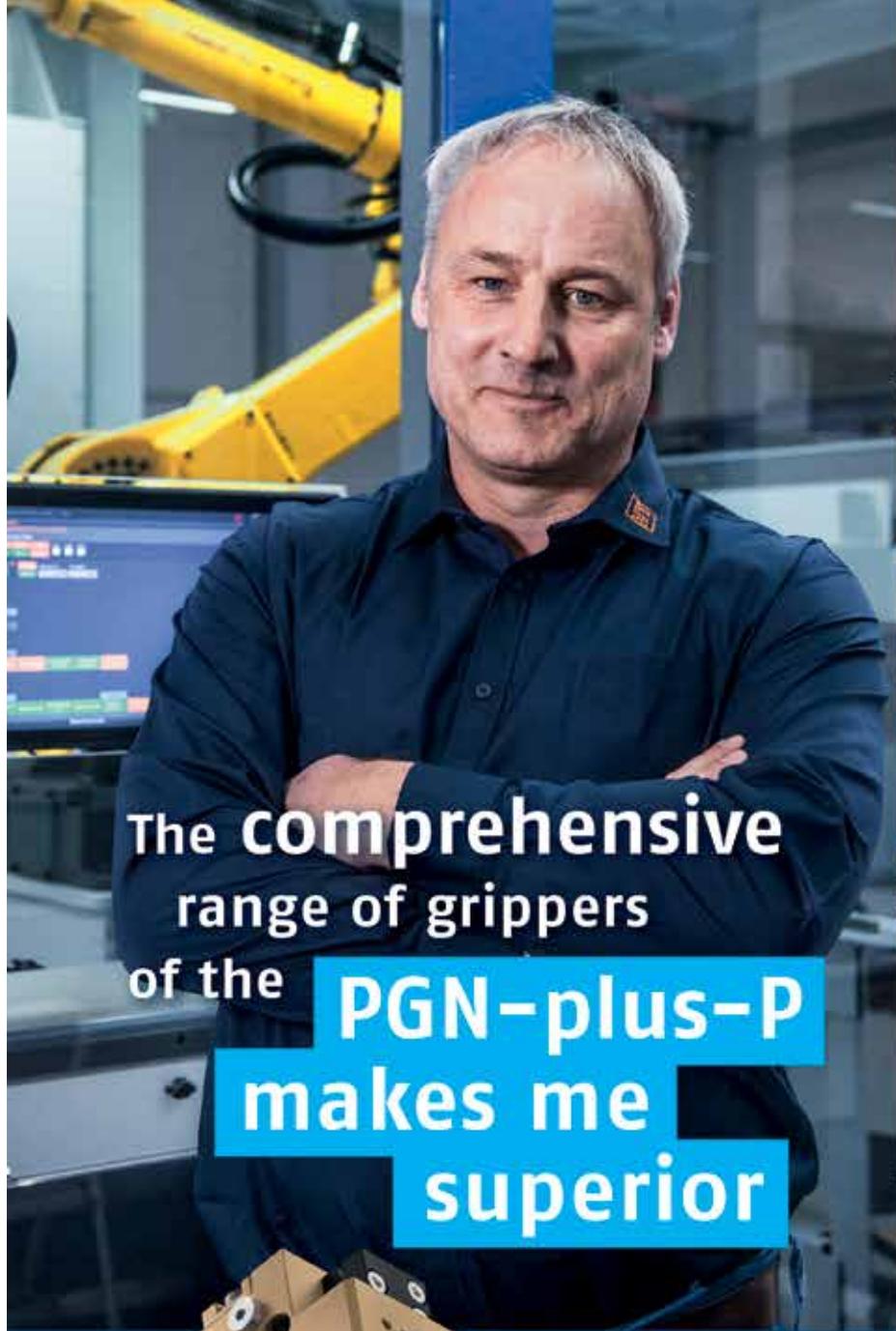
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The comprehensive
range of grippers
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every application"

Thomas Imme, Project Manager for Mechanical Production,
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More at schunk.com/makesmesuperior





CoroDrill® DS20

What innovation looks like

After years of R&D and customer testing, we are convinced – CoroDrill® DS20 is truly the best indexable short hole drill on the market.

The concept consists of new designs for both drill body and inserts. It offers superior reliability and predictability with outstanding penetration rates for your 4–7×DC drilling operations. CoroDrill® DS20 is the first indexable drill to reach hole depths up to 7×DC – with no need for pilot drilling – reducing your cycle time and cost per hole.

We proudly welcome you to discover the new benchmark for indexable drilling – CoroDrill® DS20.

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